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ORIGINAL ARTICLES.

THE TREATMENT OF SCARLET FEVER WITH THE MOSER ANTISTREPTOCOCCUS SERUM.

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FOR the last four years all the severe cases of scarlet fever admitted to the Annakinderspital in Vienna have received the Moser serum with results not less remarkable than those seen after the use of diphtheria antitoxin. As this method of treatment is little known in America, an account of the preparation of the serum, the mode of employment and the results following its use may be of more than passing interest.

While the definite cause of scarlet fever has not yet been discovered with absolute certainty, for more than twenty years the claim has been made that it was due to a streptococcus. The literature on this point is now quite voluminous, and two general views are taken. Baginsky, D'Espine, and Moser believe that scarlet fever is primarily due to a streptococcus, while Heubner, Marmorek, Slawyk, Pearce, and others claim it is produced by an agent as yet unknown. The supporters of this latter view admit that the streptococcus is the most constant micro-organism found, but they explain its presence as the result of some secondary infection. A theory has recently been advanced that scarlet fever is produced by a symbiosis of the streptococcus and the unknown virus.

Courtois found streptococci in the urine of 91 per cent. of scarlet fever cases with aluminuria, and in 27 per cent. of cases without albuminuria. Charlton[1] detected streptococci in the tonsils and pharynx in 55 per cent. of his cases, and invariably in the blood of the most severe cases during the first five days of the disease. Baginsky[2] cultivated streptococci either alone or associated with other bacteria in 411 out of 696 cases, and in 82 fatal cases streptococci were found in all the organs in every instance. Hektoen,[3] who is doing some valuable work along this line in America, was only able to demonstrate streptococci in the blood of living scarlet fever patients in twelve per cent. of his cases.

Moser,[4] working in the Annakinderspital in Vienna from 1897 to 1902, was able to obtain pure cultures of streptococci in the heart blood of 63 out of 99 fatal cases, and twice in the cerebrospinal fluid of living children. From his investigations he believes that some direct relationship exists between these streptococci and the etiology of scarlet fever. In support of this view he has recently shown[5] that streptococci from scarlet fever patients agglutinate in a positive specific manner with the immune serum, and Schick also found that streptococci from the throats of uncomplicated cases agglutinate positively with the Moser serum. Weaver,[6] on the other hand, claims this agglutination is in no way specific, and is of no value as a means of diagnosis.

Behring and Marmorek both demonstrated that specific immune bodies appeared in the blood of animals inoculated with streptococci. Marmorek, believing that the streptococci were the result of a secondary infection, was the first to attempt to treat scarlet fever by injecting antistreptococcus serum. He obtained the streptococci from other sources than scarlet fever cases, and first cultivated them through animals before he inoculated horses. The use of this serum did not produce the anticipated favorable effect on the course of the disease. Aronson, in Berlin, obtained a serum from streptococci from the throats of scarlet fever patients, which were passed through animals until they had reached a high virulence similar to the method employed by Marmorek. Baginsky gave this serum a thorough trial without satisfactory results.

Meyer was the first to show that streptococci passed through animals lose their earlier agglutination power with a certain serum, and Petrusky and Koch recently pointed out the fact that in the passage through rabbits the virulence of Marmorek's streptococci was increased toward rabbits, but decreased toward man.

Moser employs a different method in order to prevent any biological changes in the streptococci. The horses receive injections of bouillon culture of streptococci direct from the child. Up to the present time he has isolated nearly 30 different types of streptococci, and as he injects them all his serum is a true polyvalent one. He has also shown that these streptococci differ from those found in the other streptococcic diseases of man, such as erysipelas, etc.

The steps in the production of this serum, briefly, are as follows: An ordinary bouillon culture is made from the heart blood of a fatal case of scarlet fever, and grown for three to six days. It is then injected subcutaneously into the horse. This produces a slight reaction with fever, etc. These injections of cultures from different cases are given over a week in gradually increasing doses. It takes seven to nine months to produce a suitable serum, and some horses are never able to produce a satisfactory serum. No carbolic acid is used to preserve this serum. When sufficiently potent, the serum, in a dilution of 1 to 250,000, should agglutinate the streptococci.

Freund,[7] chief of the chemical laboratory of the Wiener Rudolfs-Stiftung, isolated a poison in the stools of scarlet fever patients, which was toxic to mice. Several doses of this toxin were injected in mice with one cubic centimeter of the Moser serum. The serum protected these mice while the control mice all died.

All scarlet fever patients received at the Annakinderspital are classified on admission according to the severity of the case. Group I includes the mild cases, Group II more severe cases, with high fever; Group III, very severe cases, with symptoms of general intoxication, and Group IV, the lethal cases, in which there is apparently no chance of recovery. The serum is generally employed in cases classified under the last two groups. The serum is injected subcutaneously in the abdomen. At first 30 c.c. were given, but it was later found that larger doses were necessary, and now 200 c.c. are given as a dose. This is a much larger amount than is employed by Marmorek or Aronson, but no bad results save the serum exanthem has been observed. A second injection is very rarely necessary.

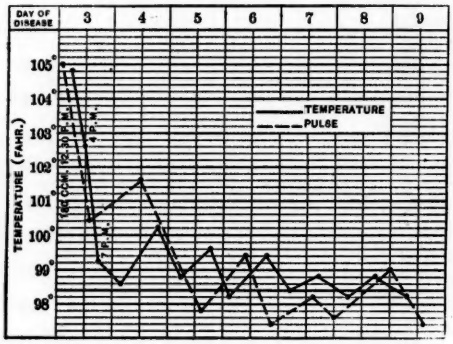
The results from the serum are noticed within a few hours. The fever falls to normal without any signs of collapse or sweating, the pulse rate diminishes, and its quality is improved, the symptoms on the part of the central nervous system rapidly subside, and there is a marked and perceptible improvement in the general condition of the child. In short, all the symptoms of a general toxemia rapidly disappear. The effect on the temperature and pulse can be seen in the accompanying chart. Chart 1 is from a child two years old, who was admitted on the third day of the disease with a severe Group III type. The temperature was 104.8° F., and the pulse 160 before the injection of 180 c.c. of the Moser serum.

The rapid fall in the temperature and pulse rate is very marked. This chart can be said to be typical of the effect of the serum on severe cases of scarlet fever. It does not demonstrate, however, the great improvement in the mental and physical condition which is so convincing to those who are able to follow the course of the disease. For the purpose of comparison, ejections of 200 c.c. of normal horse serum have been given several times without producing any effect on the temperature or course of the disease. Marmorek's serum has also been employed without any noticeable effect.

A more striking demonstration of the effect of this serum is seen in Charts 2 and 3. Chart 2 shows the temperature curves of two sisters, aged six and eight years, who were brought to the hospital on the same day with a Group II type of scarlet fever. The child with the highest temperature, 104.6° F., was given 200 c.c. of the serum, and the temperature fell rapidly. The disease ran an ordinary course in the sister, who did not receive the serum.

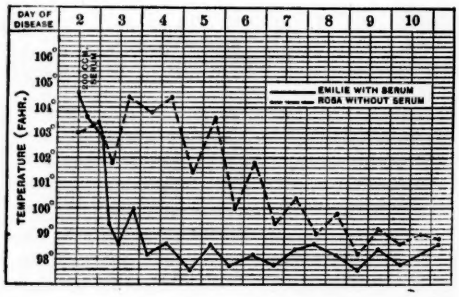
Chart 3 shows the curves in two brothers, one of whom, on admission, had more severe symptoms than the other. He received 180 c.c. of serum, and made a rapid recovery. The uninjected brother, however, grew worse, and it was necessary to give him serum on the fourth

CHART 1.



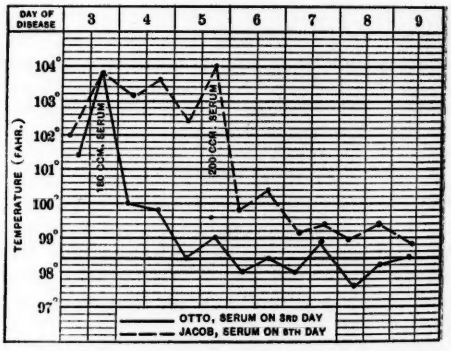
John Lachner, aged two years. Group III type.

CHART 2.



Rosa S., aged eight years, and Emilia S., aged six years. Group II type.

CHART 3.



Otto W., aged eleven years. Group III type.
Jacob W., aged thirteen years. Group II type.

day. Charts like these could be greatly extended, but enough are shown to illustrate the striking effect of the Moser serum on the course of scarlet fever.

Sequelæ and complications have been less frequent since the use of the serum, and when they do occur they are less severe. No fatal case of nephritis has occurred in any of the injected cases.

From November, 1900, to July, 1904, 1,069 cases of scarlet fever have been admitted, and of these 228 received the serum. The severe and lethal cases are invariably injected. The mortality for four years before the serum treatment averaged 14.5 per cent. and for the four years since its employment the mortality averaged 8 per cent., whereas for the same period in the other scarlet fever hospitals in Vienna the mortality where the serum was not used averaged 13.1 per cent.

The only unpleasant result following the use of this serum is the serum exanthem. This is often accompanied with fever, and while it is not at all dangerous, it makes the children very uncomfortable. Little is known as to the cause of this serum sickness. The younger the child the more pronounced are the symptoms, and the smaller the quantity of serum injected the less apt is the exanthem to follow. Serum sickness followed the injection in 73 per cent. of the cases.

Moser injected 10 c.c. of the serum as a prophylactic measure in fourteen children in private families, who had been exposed to scarlet fever, and of these four came down with the disease. The attacks in all these cases were lighter than the ones to which they were exposed. A more instructive example was afforded in one of the hospital wards where twenty-five children were exposed. They all received a prophylactic dose and not one contracted scarlet fever. While the number of cases in which a prophylactic dose has been given are too few to give conclusive proof of its value, yet the results so far accomplished are most encouraging.

A comparison of the mortality rate from diphtheria and scarlet fever for the past ten years in the Annakinderspital illustrate the beneficent effect of serum therapy in both diseases.

Year.	Diphtheria. Per cent.	Scarlet Fever. Per cent.
1893	44.4	25.2
1894	43.	21.
1895	18.4 *Serum*	20.
1896	17.4	17.6
1897	13.6	11.1
1898	11.3	12.3
1899	10.3	6.4
1900	9.6	12.4
1901	10.7	8.9 *Serum*
1902	8.1	6.7
1903	6.5	8.5
	January 1 to July 1, 1904.	7.6

At the present time this serum is prepared only at the Vienna Serum Institute, and is not on the market. For this reason its use has been necessarily limited, and only a few clinical tests have been made outside of the Annakinderspital. Pospischill,[8] of the Wilhemina Hospital, received a supply of the serum and reported on twenty-six cases of scarlet fever thus treated. They were all of the most severe type, and eleven terminated fatally. Several apparently hopeless cases recovered, and in the conclusion of his article Pospischill testifies to the value of the serum treatment, and says that "fall in the temperature, pulse rate and respiration, increased volume and tension of the pulse, brightening of the intelligence, peaceful sleep, return of warmth of the extremities with disappearance of cyanosis, and an improvement in the appetite, are the most marked and constant results of the injection."

Bokay,[9] of Budapest, was provided with some serum, and employed it in twelve of his most severe cases. Two of these died. He observed the same effect on the temperature, pulse and nervous system, and said that, while he could not give a final judgment from so few cases, yet his impressions were most favorable, and he was convinced that the Moser antistreptococcus serum had a real antitoxic action on the course of scarlet fever. Knöpflelmacher has also used this serum with most satisfactory results in the Carolina-kinderspital in Vienna, but has not yet published his experience.

Professor Escherich took charge of the Annakinderspital in 1902, and was rather sceptical about the efficacy of the serum treatment, but he later became thoroughly convinced as to its value, and is now an ardent advocate of the treatment. His paper[10] before the International Medical Congress at Madrid is a fair and convincing argument in support of the Moser serum.

I wish to express my gratitude to Professor Escherich and to Dr. Moser for their kindness in affording me an opportunity to watch the effect of the serum treatment in the scarlet fever wards.

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Eastern Medical Society.—The Genito-Urinary Section of the Eastern Medical Society will meet on Tuesday evening, November 1, at Clinton Hall, 151-153 Clinton Street, New York. Program: *Symposium on Prostatic Hypertrophy.* 1. Etiology and Pathology of Prostatic Hypertrophy, Harlow Brooks, M.D.; 2. Perineal Prostatectomy, by a Special Method, Parker Syms, M.D.; 3. Complete Suprapubic Prostatectomy, without Ether or Chloroform (with specimens of prostates removed), Joseph Wiener, Jr., M.D.; 4. The Present Attitude Towards Prostatectomy, Martin W. Ware, M.D.; Discussion by Drs. Charles H. Chetwood, Willy Meyer, Albert A. Berg and Henry Roth.

A CASE OF TYPHOID FEVER WITH REPEATED CHILLS.[1]

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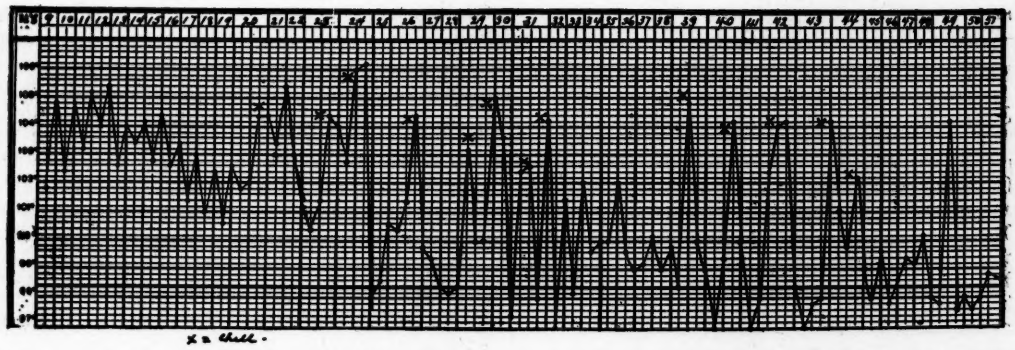
CHILLS in typhoid fever, while not uncommon, are rarely repeated or of great severity. A chilly sensation, sometimes a distinct chill, may usher in an attack, and at any time during the course of the disease the onset of a complication, especially one associated with the formation of pus, may be heralded by a distinct chill. Coincident malaria, especially toward the end of an attack, may produce its characteristic chills, and finally, chills may come in the course of the disease and even in convalescence, nothing being found to explain their occurrence. To this last class the case that I report evidently belongs.

The patient, a male thirty years old, was admitted to St. Vincent's Hospital on July 16, 1903. His family history was good. He was a moderate user of beer, whisky and tobacco. He denied any venereal disease. He had never been seriously ill before, and had suffered from nothing but the usual diseases of childhood. His present illness began about one week before his admission, with weakness, loss of appetite, and vertigo. He had headache, but no nose-bleed or vomiting, his bowels were regular and his stools apparently normal. For three days he had been sick enough to be in bed and have a physician, and at the end of that time, not seeing any improvement he came to the hospital. On admission his temperature was 103.8° F., his pulse 100, and his respirations 30.

Physical examination showed the patient of moderate size, fairly nourished and not anemic. His tongue was moist and coated. The heart was normal and also the lungs. The pulse was regular and of good quality, without arterial thickening. The liver percussed from the fifth space to the free margin. The edge was not felt. The spleen was readily palpable one inch below the free margin of the ribs and was slightly tender. His abdomen was not distended, but was sparsely covered with typical rose spots. His urine gave a marked reaction for indican and his blood a strong Widal reaction in a dilution of 1 to 50. He was put on the usual typhoid treatment and was given sponge baths for a temperature of 102.5° or over.

For the first week there was nothing of note, his condition remained good, his temperature varied between 102.5° and 104.6° F., being fairly controlled by sponging. His pulse remained about 100 and of good quality, and he received only one-half ounce of whisky every four hours.

On the tenth day after his admission, approximately the seventeenth of his disease, his temperature dropped to 101° F. and remained low for three days and everything seemed favorable. Then on the twentieth day of his illness he had a severe shaking chill, lasting one-half hour, followed by a rise of temperature to 104.2° F. Nothing abnormal could be discovered, especially were the lungs clear. At this time the urine contained a trace of albumin with a few granular casts. No malarial organisms could be found in the blood after repeated search and his leucocytes were 7,600. The following day, the twenty-first, he had no chill, but his temperature rose to 105.4° F.



On the twenty-third day he had another chill, and on the twenty-fourth still another, followed by a temperature of 106.2° F. With this last chill he became much cyanosed and did not react well, so that for the succeeding temperature no bath could be given, and it was necessary to put him in a hot pack. Careful examination twice a day failed to reveal any cause for the chills. These were repeated on the twenty-sixth and twenty-ninth days, on which latter day he had two. On the two days between the temperature was nearly normal, and between the chills his general condition was fair, but during and after the chills he seemed almost *in extremis*. On the thirty-first day there were two more chills, but from then on for eight days, only a slight irregular temperature, usually under 100° F. The chills were repeated on the thirty-ninth, fortieth, forty-second, forty-third and forty-fourth days, followed each time by a temperature of 104° F. or over, and once a drop to 96° F. in four hours.

On the forty-first day he developed a femoral thrombosis of the right leg, which was tender and caused some edema, but did not otherwise compli-

cate matters. Frequent examination of the blood failed to show a leucocytosis, a blood culture was negative, and nothing additional could be detected. The patient became very much emaciated and so, irrespective of the chills, was fed on eggs and junket, with toast and scraped beef, in addition to the milk.

There was a cessation of the chills from the forty-fourth to the forty-ninth day, when the last one took place, being apparently as severe as any of the others, and followed by a temperature of 104.2° F. After this there were no more chills, but occasional elevations in temperature.

It will thus be seen that there were 14 distinct chills, all followed by a marked rise of temperature. In endeavoring to account for them we may, I think, disregard malaria. Repeated examinations of the blood failed to show organisms, there was no periodicity about the attacks and the exhibition of quinine, ten grains three times a day, had no effect upon them.

The signs of complications were looked for in vain, the lungs were always clear, the bones, the gall-bladder and kidneys never gave any signs of involvement and there was never any leucocytosis. The one abnormality recognized was the femoral thrombosis, but it would be difficult to hold this responsible for all the trouble, as the chills began twenty-two days before its appearpearance and there was none on the day that it was first seen.

We can then do no more than say that this was a case of typhoid fever with repeated chills of unknown origin.

OSTEOPLASTIC GASTROTOMY FOR IMPERMEABLE CICATRICAL STRICTURE OF THE ESOPHAGUS.

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IN view of the very recent introduction of osteoplastic operations as a means of reaching hitherto inaccessible parts of the organs situated within the cavity of the diaphragm, the following case may be of interest:

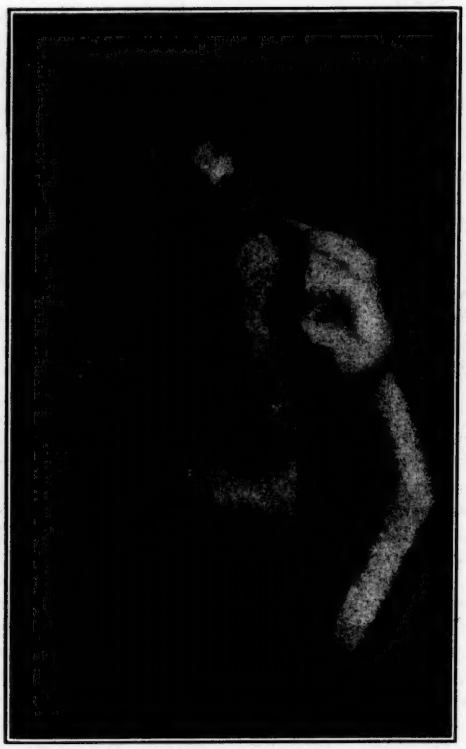
S. F., male, fourteen years of age, swallowed a large quantity of caustic lye, by mistake, in February, 1896. He was immediately taken to a neighboring hospital, where the stomach was washed out. It was necessary to resort to rectal feeding. Ten days later he was admitted to one of the city hospitals, where gastrotomy and division of the stricture by Abbe's string method, at the same sitting, were done one month later. Under suitable after-treatment the boy was soon able to take food again by way of the mouth. He remained at the hospital about a year, a bougie being introduced every few days and left in the esophagus for twenty-four to forty-eight hours, while the patient swallowed his food alongside the instrument. But in spite of all that was done, the esophagus showed great tendency to recontraction. By the end of the year the stricture had reformed, and a gastric fistula, according to Witzel's method, had to be established. All attempts at passing the esophagus from above or below were unsuccessful and the boy had to be fed entirely through the gastric fistula. This was kept up for seven years, when the mother, anxious that something should be done for the relief of the boy's condition, brought him to the German Hospital in September, 1903. On examination it was found that the stricture in the esophagus was absolutely impermeable. Then, with the view of perhaps facilitating the finding of an entrance from above, Dr. Torek (at that time in charge of my service) established an esophageal lip-fistula; but this, too, proved of no avail.

When I first saw the patient, September 21, 1903, the entrance into the stricture was so tight that it was impossible to pass even a filiform bougie into the stomach by way of the esophageal fistula. The instruments could be pushed forward for about two inches and then became bent. The retrograde passage was, therefore, tried. After thorough irrigation of the stomach, and filling the latter with water, the electric cystoscope was introduced through the gastric fistula and attempts made to locate the cardia, but without success. At the site of the cardia was an irregular scar, surrounded by a zigzag line, but no lumen could be detected anywhere. The same negative result was met at repeated subsequent sittings. Thereupon the direct view with the help of the Rochester cystoscope—the stomach being filled with air—was tried, but also in vain. Our endeavor to find and enter the cardia with a long urethro-endoscope, likewise, failed. The idea of gaining entrance to the esophagus from the stomach, therefore, had to be given up.

Hence, the route through the esophageal fistula again was tried. Kelly's cystoscopic tube (No. 10), with the boy's head in a hanging posture and turned to the right, was pushed forward until resistance was met with. A small electric lamp, on a curved handle, was then introduced into the tube, down to its distal end and thus the upper entrance into the stricture could be clearly seen. The picture presented the exact appearance of a cervix uteri, that is to say, there was a mass, evidently made up of scar tissue, projecting upward into the lumen of the esophagus, showing in its middle a minute hole, from which bubbles of air were pressed out in coalition with respiration. This spot was probably about one inch above the bifurcation of the trachea. A fine probe passed for a distance of about one half inch. Efforts to distend the canal with fine laminaria tents and to push down (of course, with moderate force) a straight metal probe, as the passage of flexible bougies was always quickly arrested, were continued for the following eight to ten weeks.

As the procedure, however, became too painful and general anesthesia was required for each sounding, it was thought best to have but one sit-

ting a week, so as not to overtax the already greatly reduced strength of the patient. It was found during these maneuvers, that the lumen of the esophagus was curved at various places. Generally, on deep inspiration only, the instrument slipped down further and further. By the beginning of December the probe passed down the esophagus to such length that it should have entered the stomach, according to measurement made, after withdrawal, on the outside of the chest. It was therefore inserted again and the cystoscope introduced through the gastric fistula. But the tip of the probe could not be detected in the stomach, nor could it be reached by means of curved metal probes passed in the same



Sidney F.—Osteoplastic gastrotomy. Curved scar shows line of incision. Below the same scar resulting from former gastrotomy and gastrostomy; exit of tube at inner angle. On the neck esophageal lip-fistula.

way. It was therefore concluded that the probe must have entered a false passage and have been arrested above the diaphragm.

In this emergency I resolved to raise the left border of the ribs by means of an osteoplastic operation, as recently described by Marwedel.[1] Of course, the task here was somewhat different from that in the operations mentioned by Marwedel and Asthoewer, who had done two somewhat similar operations several years previous.[2] In my case it was necessary to avoid interfering with the gastric fistula, if possible, and keep the stomach firmly attached to the abdominal wall. The incision parallel with the border of the ribs up to the ensiform process could not be carried out.

The operation was done on December 21. As the accompanying illustration will show, a U-shaped incision was made, the tip of the anterior leg corresponding to about the middle of the cartilage of the seventh rib, the convexity dividing the skin just below the border of the ribs. After the skin covering the region of the gastric fistula had been well pulled down in order to reach tissue that had not yet become interwoven with the scar, the tip of the posterior leg of the U crossing the outer end of the cartilages of the tenth, ninth, eighth and seventh ribs, it was possible to enter the abdominal cavity about one-half inch above the gastric fistula. The seventh cartilage having been divided with a knife near the sternum and those of the other ribs on the outer side, likewise, it was possible, by means of sharp retractors, to raise the flap sufficiently to allow a good view of the wall of the contracted stomach about 1½ inch above the region of the gastric fistula.

For reasons not apparent at that time, the flap did not yield sufficiently to permit of proper access to the cardia. As it was absolutely necessary to keep the gastric fistula intact, this point was not pressed. According to the plan of operation previously arranged, the patient was now placed in a pronounced Trendelenburg posture and the entire subdiaphragmatic space on either side of the stomach well packed with loose aseptic gauze in order to avoid soiling the peritoneal cavity. Two silk threads were now passed through the gastric wall, serving as retention slings, and the stomach was pulled into the wound on the outer side of the gastric fistula, the position of the patient remaining undisturbed. A horizontal incision about two inches in length was then made into the stomach. The further procedure resembled prolonged intravesical work after suprapubic cystotomy. Large blunt retractors were introduced into the stomach and the depth of the organ was unfolded by means of sponges on a handle.

With the small electric light the region of the cardia could be very closely inspected, but the cardia could not be seen. There appeared in the upper part of the fundus, about one inch to the left of the spot where the cardia ought to be, a minute hole, from which, at times, a few bubbles of air were seen to emanate, just as we had perceived them at the upper entrance in the esophagus. Perhaps this small hole was the cardia, drawn aside by cicatricial contraction or it had to be looked upon as the lower end of a false passage made with the metal probes so frequently passed. Various kinds of instruments introduced into the same met with an insuperable resistance. There, furthermore, was to be seen at the normal site of the cardia that stellated scar, observed before with the electric cystoscope. After this vain search for the cardia the stomach was temporarily

1 Centrallatt f. Chirurgie, 1903, No. 35, p. 938.
2 Ibid, p. 125.

packed with gauze, the table lowered and a metal probe, introduced from above by means of the Kelly cystoscope, gently pushed down as far as we had succeeded in gaining a passage for it on former occasions. This was firmly held in place by an assistant, the patient's pelvis again raised and, with a finger in the stomach, the lower end of the probe was searched for, but could not be felt. Evidently its tip was in a false passage above the diaphragm, as concluded at previous occasions. A grooved director inserted through that small opening repeatedly referred to, likewise, failed to meet the probe in the esophagus.

At about this time a peculiar tearing sound was heard, and the assistant who held the osteoplastic flap back with a pair of sharp retractors noticed that it had yielded considerably and could be lifted back much further than before. With the view of possibly overcoming the twisted course of the lower end of the esophagus, the stomach wall was grasped with several Muzeus's forceps around that small hole from within and pulled forward as we are wont to do with the bladder when extirpating a vesical tumor. But this proved to be a very disturbing factor in our work. The gastric mucosa being much thicker than that of the bladder, the teeth of the forceps had principally grasped the mucosa and, on continued traction, tore out one after the other, leaving persistently bleeding small tears, which blurred the picture in a most annoying way. The intention had at one time, to divide the stomach wall from within with Paquelin's cautery on a grooved director introduced through that small hole mentioned before, was given up again, on account of the result being too uncertain. This would have been the only chance for a successful issue of the task, according to my present view of the case.

In order to accomplish something in the way of helping the boy, if at all possible, a slender dressing forceps was now placed with its tip on that stellated scar, which had been regarded as probably representing the cardial orifice, pushed through the slightly resisting tissue and gently pressed upward for a distance of two to four inches. It was then opened and held in place. Through the opening thus made air was heard to pass in and out with each respiration. Various instruments were then pushed up, but all of them were arrested in their course at the same point, without touching the probe. Further attempts were thereupon abandoned. The new incision in the stomach was closed with a double row of Lembert silk sutures.

After the table had been lowered it was seen that much better access had been gained to the cardia than we had had in the beginning of the operation; the resistance of the flaps had evidently partially yielded to the continuous traction that had been applied. The cardia and immediate neighborhood of the stomach now were clearly visible and it was noticed, that by pulling on the stomach, the lower end of the esophagus could be pulled down. Had it not been for the precarious condition of the feeble patient, I should have at once made a second incision in the region immediately adjacent to the lower end of the esophagus and continued my efforts to carry my point. As it was, I had to give up all further attempts for the time being. The osteoplastic flap was fitted back in its former place, the skin being sutured with interrupted silkworm gut, without drainage. Recovery followed. Nutrient enemata were given for the first three days, when feeding through the gastric fistula was resumed. At present the patient is gaining about half a pound a week and, with careful nursing his general condition is steadily improving.[1]

It is needless to say that my inability to gain a passage through the esophagus from below was a great disappointment to me. I had hoped to see a silk thread pass from the gastric to the esophageal fistula at the end of the operation. Perhaps I should have been more successful had the osteoplastic flap yielded as fully in the beginning of the operation at it did toward the end. I should then probably have changed my plan and attacked the lower portion of the esophagus, with the patient on his back, and made an incision running directly up toward the region of the cardia.

As I do not believe that the boy, undeveloped as he is, will grow up properly under present conditions, it is my intention as soon as he has gained sufficient strength, to again raise the chest flap, open the stomach close to the cardia, follow up that blind canal mentioned above and try to find the way upward.

Surely this operation has shown me the great help we may expect from this osteoplastic raising of the lower part of the thorax, when it becomes necessary, to reach the ordinarily inaccessible organs situated in the convexity of the diaphragm.

It is my belief that gastrectomies, which hitherto may have appeared impracticable on account of insufficient access to the proximal end of the stomach, may now still be carried out by means of this osteoplastic operation. It further seems evident, that, by the help of this procedure, our surgical work within the vault of the diaphragm—on the left as well as on the right side—will gain considerably in exactness.

THE ETIOLOGY OF GASTRIC HEMORRHAGE.

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ULCERATION is the most common cause of hemorrhage from the stomach, but there are many other possible and probable conditions which may act as etiological factors.

So numerous are these different causes that they may be very conveniently designated as: (1) stomachic, (2) extra-stomachic, (3) unknown.

The conditions classed under *stomachic*, will

1 Patient was presented before the New York Surgical Society on January 27, 1904.

include all those in which the primary cause of the hemorrhage is to be found in the stomach. With the hemorrhage due to *extra-stomachic* causes will be included, those in which the chief and primary cause is to be found in some of the adjacent structures; the gastric disturbance being but a secondary matter. Under the heading *unknown* will be classed the hemorrhages which cannot be accounted for pathologically.

In Stomachic Causes.—The frequency with which hemorrhage is detected in cases of stomach pathology, will depend to a very large extent upon the investigator, the more carefully it is looked for, the more frequently it will be found. The most frequent cause of gastric hemorrhage is ulcer of the stomach, which according to the most reliable authorities, occurs in about five per cent. of the entire population, though this percentage is questioned and severely criticised by Byron Bramwell.

Hematemesis, either chronic or acute, is present in from 45 to 80 per cent. of those afflicted with gastric ulcer. Leube found it in 46 per cent. of 556 cases, Ewald in 364 cases noted it 203 times, 54.5 per cent, while Greenough and Joslin discovered it in 81 per cent of 187 cases.

Ulcer and hemorrhage occur more frequetly in females than in males, and usually in the third decade of life.

Gastric ulcer may be described as a loss of substance of the stomach wall, "a progressive necrosis of tissue." The most usual form is the chronic, which may vary in size from 1 to 10 cm. in diameter. Its base may consist of any of the layers of the stomach wall, depending upon the destruction of tissue that has taken place. Its edges are terraced, involving more of the mucosa than the deeper structures, and are sometimes, but not always thickened, and indurated. In shape it generally resembles a shallow saucer, and may be either single or multiple. It is usually situated in the pyloric region, near the lesser curvature and most often on the posterior wall.

The acute form is similar to the chronic except that the deeper layers are as much involved as are the more superficial ones. Giving to the acute ulcer the "punched out" form described by Rokitansky, there is very little, if any, thickening, induration, or inflammatory reaction surrounding this type of ulceration. Hemorrhage or perforation may occur in either form.

The erosions of the stomach are closely related to ulceration, so closely, that some authorities consider them to be antecedents of ulcer, while others believe them to be separate and distinct lesions. They are small streaks, or rounded areas, from the size of a millet seed to that of a split pea, over which there is a loosening or a loss of the mucous membrane and on which is found extravasated blood, varying in color according to the stage of disintegration. Their number is variable. likewise their situation, though there seems to be a predilection for the region of the pylorus. Dieulafoy has divided these erosions into simple erosion, in which merely the surface epithelium is absent, and exulceration simplex, in which there is an extension to, and an involvement of the vessels which lie beneath the muscularis mucosa.

There are various theories advanced to explain the occurrence of ulceration of the stomach; such as an increase in the quantity or the quality, of the gastric juice, alkalinity of the blood, embolism or thrombosis, impoverishment of the blood, traumatism or irritation, spasm, nervous or trophic disturbances, omental adhesions, etc. But it may be said that the exact cause of ulcer of the stomach, if there is one, has not as yet been definitely determined.

Erosions are explained by the occurrence of an interference with the circulation of the superficial layers of the mucous membrane, which results in a hemorrhagic infiltration and digestion by the gastric juice, being practically the same as the embolic theory of gastric ulcer. Microscopically the ulcer will show but few changes of a marked character. Besides the loss of tissue, molecular changes in some cells, more or less round-cell infiltration and a proliferating endarteritis, there will be but little of note. The erosion shows, in the majority of cases, a loss of the superficial part of the mucosa, and, with the exception of an infiltration with red cells, there will be very little variation from the normal.

As the ulcer progresses, it involves numerous blood vessels; at first small ones, and then, as it invades the deeper structures of the wall, the larger vessels are eroded. Hemorrhage may be entirely lacking, or in such small amount as to be practically negative. Small hemorrhages may be repeated very frequently, or become practically continuous, resulting in very severe anemia. Larger hemorrhages may occur at intervals, or but once, and never be repeated, or may immediately terminate fatally. All this variety of hemorrhage from ulcers quite similar in character, and the fact that in one ulcer a large artery will be eroded with no hemorrhage, and that in another ulcer, comparatively small, involving only the smallest vessels, there will occur a hemorrhage so profuse as to cause death, has been explained by Ewald on the supposition that, in these cases, there exists a certain predisposition to a deficiency in the fibrinoplastic power of the blood, and with this an insufficient or ineffectual formation of thrombi.

Acute or chronic gastritis may, in aggravated cases, cause blood to appear in the vomitus, but a distinct hematemesis will but very rarely occur; as it may with tuberculous, typhoid, diphtheritic or other specific ulcerations of the gastric mucous membrane. The hematemesis caused by carcinoma, will usually be easily differentiated from that caused by ulcer, by means of the history, and the character of the vomitus, the "coffee-grounds vomit" of cancer. But in the early stages of carcinoma, and in the unusual case it will be impossible to differentiate, just as it is often im-

possible to differentiate by other signs or symptoms, or even by macroscopic examination. The fact that carcinoma develops from an ulcer in a certain proportion of cases, makes this differentiation more difficult and obscure.

Traumatism, direct or indirect, has been the cause of hemorrhage from the stomach in quite a few instances. And it should be remembered that hematemesis following a penetrating wound of the abdomen, does not necessarily imply that the stomach has been perforated. The accidental swallowing of foreign substances, such as pins, needles, tacks, etc., bones, glass, seeds, stones, or other materials in food and drink, may cause hemorrhage. Kocher mentions an instance in which hemorrhage was caused by the lodging of a cherry stone in an ulcer. Corrosive poisons, strong acids, alkalies or other irritants, such as drastic purges or emetics may excite bleeding.

Continuous vomiting or retching, the use of the stomach tube, or aspiration by the stomach pump, may injure the mucosa sufficiently to cause slight bleeding. Inflation of the stomach with CO_2 for diagnostic purposes has in one instance caused death, by exciting hemorrhage from the base of an ulcer. Another cause of gastric hemorrhage, to which attention has not been adequately attracted, is operation.

Instances in which operations of gastro-enterostomy, for benign stenosis of the pylorus, and gastrorrhaphy for perforation have been followed, after varying intervals, by hemorrhage from gastric or duodenal ulcers, have been reported by Furner, Collins, Eccles, White, W. Petersen, English, Keetley and others. Eccles, in explaining his case, says: "It is probable that the manipulation necessitated by the delivery of the stomach for operation, caused a fresh extension of the duodenal ulcer." Fatty, hyalin, amyloid or other degenerative changes of the vascular wall have been ascribed as causes in some few instances. Miliary aneurism has also been found to be the cause of hemorrhage. The swallowing of leeches, and the larvæ of insects, have been known to be followed by the vomiting of blood.

Extra-stomachic Causes.—The chief causative factor of hematemesis, outside of the stomach proper, will be found in various conditions, giving rise to interference with the portal circulation, as is best exemplified by cirrhosis of the liver. J. P. Frank, in 1794, was the first to observe the relationship of cause and effect, between cirrhosis of the liver and the vomiting of blood. Since then a number of most excellent articles have been written upon this phase of gastric hemorrhage. Law, in 1828, was one of the first to emphasize the subject. In 1884, Benz could find only 19 cases, but Debove, in 1890, and in 1900, Preble added so materially to the literature. Welch says, "Next to ulcer and cancer of the stomach, cirrhosis of the liver is the most frequent and important cause of gastrorrhagia."

Not alone cirrhosis, but any disease of the liver, such as syphilis, senile atrophy or portal thrombosis, capable of exerting pressure, or otherwise interfering with the portal vein or its subdivisions, may give rise to congestion of the gastric mucous membrane, and in turn to hematemesis. This variety of hematemesis, due to congestion of the mucosa, is not the common form, the more usual, 80 per cent. according to Preble, is the false gastrorrhagia, from esophageal varices. These esophageal varices form, at the esophageal, collateral portal circulation. Owing to the difficulty experienced by the portal blood in passing through the liver, numerous collateral circulations are established. One of these, at the esophageal opening of the stomach, where the gastric and esophageal veins anastomose, is frequently the site of great dilatation. Varices or esophageal "piles," as they have been called, are thus formed. These dilated and attenuated veins may rupture, and allow the escape of the blood into the stomach, from which it is vomited, causing a false hematemesis almost impossible to differentiate from the true.

Venous congestion may be caused by various other conditions such as enlargements of the spleen, or other intra-abdominal organs, adhesions to the stomach or other viscera. Causes of congestion other than interference with the abdominal circulation are less common. Interference with the thoracic circulation, as by emphysema, chronic pleurisy, fibroid lung, or by uncompensated cardiac lesions, may indirectly result in gastric congestion, and hemorrhage, but these are to be considered as very rare and exceptional, although not impossible, causes.

A simple perforating ulcer, *i.e.*, one perforating directly into the peritoneal cavity, comparatively seldom gives rise to hemorrhage. In Tinker's table of 76 cases of perforating gastric ulcer, details under the heading "Character of Attack" are given in 52 cases. In these 52 cases vomiting of blood was noted only five times. English found in 50 cases operated upon for perforation that hematemesis was mentioned eight time in the previous history (and twice it immediately preceded the perforation), but in ulcers perforating into adhesions or adjacent organs hemorrhage is much more common. The source of the blood may be very remote, and the course circuitous and obscure.

The rupture of the ventricle of the heart, an aneurism of the aorta, or some of its branches, a perigastric abscess or some similar condition, may possibly account for hemorrhage from the stomach.

Just what rôle is played by the central nervous system in exciting gastric hemorrhage, is not definitely known or settled. The intimate relationship of the stomach with the central nervous system by means of the pneumogastric nerves, as well as the communication with the sympathetic nervous system through the solar plexus, seems to make more plausible the theory

that some varieties of gastric pathology and hemorrhages may be directly due to lesions of the nervous system. Gastric hemorrhages have been noted in the source of epilepsy, tabes, hysteria, hydrophobia, tuberculous meningitis, progressive paralysis of the insane, and other nervous diseases. Nervous or emotional loss of balance are frequently followed by various manifestations of functional disturbances of the digestive mechanism.

One of the first cases in which a lesion of the central nervous system was demonstrated in hematemesis, was that of Dr. Brittan, reported by H. Bence Jones in 1860. A woman, aged twenty-nine years, had persistent stomach symptoms resembling those of ulcer. She twice vomited blood and died. At autopsy, all the viscera were found to be healthy, excepting a cyst in the fourth ventricle of the brain. Dr. Brittan concluded that irritation of the roots of the pneumogastric nerves by the cyst was the cause of the gastric symptoms.

Since then many similar cases have been reported and numerous experiments have been carried out with the object of ascertaining the exact relationship between lesions of the nervous system and abnormal conditions of the stomach wall, and as these conditions frequently give rise to hemorrhage, they will be of interest in this connection.

The experiments have consisted of such operations as cutting of the spinal cord (Koch and Ewald); intersection of thalami and cerebral peduncles (Schiff); destruction of the anterior corpora quadrigemina (Brown-Sèquard and Ebstein). Hemmeter observed submucous hemorrhages and small areas of necrosis in the stomach eight days after section of one or both vagi, in cats, dogs, guinea-pigs and rabbits. Saitta severed the vagus on both sides in sixteen rabbits and fed them on a weak solution of hydrochloric acid, and induced multiple ulceration with gastritis; in control animals with vagi intact, the procedure had no effect. Yzeren found that by dividing the vagi below the diaphragm that an ulcer was produced corresponding to those ocurring in the human stomach. The ulcer was usually situated in the pyloric region, close to the lesser curvature, and other regions of the stomach were not affected. The stomach became harder, which he supposed to be due to contraction, spasm, thus according with the theory of Talma. Fütterer has repeated many of these experiments, and calls attention to the difference between these artificial ulcers and those occurring in man. In the former healing is in progress, while, in the human stomach, there is no tendency to heal. It was only after destruction of a portion of the hemoglobin of the blood, that he was able to produce ulcers in animals that corresponded in both macroscopical and microscopical appearance, to those occurring in man.

As showing the present status of this theory as to the cause of gastric ulceration, we may quote from Welch: "Although ecchymosis in the mucous membrane of the stomach can be experimentally produced by injury of various parts of the brain and spinal cord, there is no proof that gastric hemorrhage which is of clinical importance is referable to structural diseases of the nervous system." And from Thoma, "As a matter of fact we find comparatively often in severe affections of the brain and the medulla oblongata, that there are numerous hemorrhages in the mucous membrane of the stomach and in the lungs. This is not very convincing proof, however, since a similar result is often seen in other diseases. All we can do in the mean time, is to accept the facts and ask further, whether the nerves are able to influence the permeability of the capillary wall."

III. Unknown Causes.—The occurrence of hematemetis, and the failure at autopsy to locate the site of the hemorrhage, has been the cause of considerable speculation and theorizing. Different terms have been used to signify this sort of hematemesis as, idiopathic, parenchymatous, capillary, hematemesis, analogous, active, constitutional. Watson, in 1832, expressed doubt as to the existence of this condition when he said, "Whether it be idiopathic, if indeed it ever be so." A different conception of the term is shown by Chomel, who, in 1841, said: "There are indeed cases. but in small number, where the hematemesis is evidently idiopathic. The complete return to health after such a hematemesis,, leads to the conclusion that it really was idiopathic."

Flint says: "Hemorrhages sometimes occur from the stomach, as from the bronchial tubes, the Schneiderian membrane, and in other situations, without any apparent pathological connections, neither following nor preceding any appreciable morbid conditions. It is then to be considered idiopathic." Welch tersely sums up the question when he said: "Whatever hypothesis one may construct from these so-called idiopathic hemorrages, the recognition of the clinical fact of their occurrence is important."

In recent years there is little, if any, more enlightenment upon this peculiar phase of the subject, than was given to us in 1842 by Audral when he said: "The blood accumulates in the vessels of some part of the mucous membrane and then escapes from them, and this is all we are able to discover."

As showing the circle within which investigations are frequently carried, a review of the explanations of these hemorrages will be instructive. In the early days as the escape of blood always followed the severing of an artery, it was reasoned that all hemorrhages followed the rupture of arteries. But Morgagni, in 1769, demonstrated by his dissections that the solution of the continuity of blood vessels was not a necessary antecedent for hemorrhage. Bichat, in 1799, propounded the so-called theory of

hemorrhage by exhalation, *i.e.*, the direct passage of the blood through the capillary wall. This was for many years accepted as the correct explanation of these cases by the foremost writers of their time, such as Watson, Tweedie, Goldie and others. But in 1865, Wm. Brinton, in a lecture upon disease of the stomach says: "In noticing the causes of gastric hemorrhages little need be said of the old doctrine of hemorrhage by "exhalation", through the coats of the vessels apart from any solution of their continuity. For we now know that the walls of even the finest capillaries have no pores of appreciable magnitude, such as would be necessary for the transit of blood corpuscles, and hence the extravasation of these structures is proof positive of some vessel having been ruptured. That among the myriads of these minute tubes present, the eye often fails to detect the exact vessel or vessels involved in the lesion, is of course not very surprising."

In 1867, Stricker and Cohnheim observed the passage of red blood corpuscles through the capillary wall and termed the process "diapedesis." Since then the possibility of diapedesis, as an explanation of these obscure cases has been accepted, but only after a most careful and painstaking examination of all the viscera has failed to reveal another cause.

At the end of 1903, Gerasimovitch cited a number of cases of hematemesis in which the only accountable causative factor was peritonitis. And upon a microscopical examination of the mucosa of the stomachs, minute hemorrhages by diapedesis were discovered. Welch, in this connection says: "Doubtless small gastric hemorrhages, particularly those into the tissues of the stomach, are often the result of diapedesis, but in case of profuse hemorrhages from the stomach, where the source of the hemorrhage is not demonstrated after death, the convenient assumption of hemorrhage by diapedesis, in my opinion, plays too important a rôle." He further states "that our knowledge of diapedesis does not warrant the belief that the red blood corpuscles can escape through the unsuffused walls of the vessels with the combined rapidity and abundance which would be necessary to explain the sudden and profuse hemorrhage."

It is the opinion of many that the origin of these so-called idiopathic hemorrhages, would be cleared up if a more careful examination were made. Ewald refers to the esophageal varices as an unsuspected and frequently undetected cause of hematemesis. Welch mentions a number of cases in which miliary aneurisms of the gastric arteries could have been easily overlooked. It is a significant fact, that cases of this variety appear to be decreasing in frequency, supposedly due to a more careful examination.

Dislike, as much as we may, to use the term *idiopathic* in this day and generation it must nevertheless he admitted that gastrorrhagia does undoubtedly occur, and at autopsy no rational explanation for the bleeding can be found. Such a case occurred under the master hand of Ewald in 1891. And similar ones have occurred in the experience of other experts. As showing the possibilities, in such obscure cases, that of John Mackintosh, published in 1837, will be interesting: A child died suddenly after vomiting a considerable quantity of blood. On dissection, the stomach was found filled with coagulum, and there was also some fluid blood in the small intestine. It was evident that there had been active hemorrhage, but after the most minute investigation, no blood vessel could be found from which it had issued. The contents of the thorax, including the great vessels, and the esophagus were dissected out, and examined at leisure. It was then discovered that the blood found in the stomach and bowel had proceeded from a ruptured artery in a cavern in the superior lobe of the left lung. A fistulous opening connected this cavity with the esophagus through which the blood passed into the stomach.

Hemorrhages from the stomach occur occasionally during the course of different diseases, such as typhoid, typhus or yellow fevers, cholera, measles or scarlet fever. Such hemorrhages are explained in various more or less satisfactory ways, such as the presence of bacteria in the blood, the breaking up of the corpuscular elements of the blood, or changes in the vascular wall owing to the alteration of the blood by toxins or otherwise. But it may be stated that the cause of gastric hemorrhages in such general diseases is not understood.

Melena neonatorum; gastric or duodenal hemorrhage sometimes accompanied by hematemesis, in the newly born, is likewise due to unknown causes.

A strong and unexpected shock of electricity to the epigastrium has been known to be followed by profuse hematemesis leading to death. No autopsy was performed.

Under this heading, unknown causes, must be included the so-called vicarious menstruation, and postoperative hematemesis. Many examples of vicarious menstruation will be found in the literature, cases in which, for some reason or other, the menses cease to flow, and in place of which, there occurs a vomiting of blood. Similar compensatory hematemesis are said to occur, in place of an interrupted, periodic epistaxis, or hemorrhoidal flow. The existence of such conditions are denied by many, but the majority of authorities seem to acknowledge such possibilities and their very rare occurrence. English found hematemesis undoubtedly more frequent before the onset of menstruation, which he explained by the high blood-pressure, at that time.

Postoperative hematemesis must be divided into three varieties: (1) Hematemesis, following stomach surgery, due to imperfect suturing or hemostasis. Such a hemorrhage will be con-

sidered as secondary. It must be remembered that the gastric mucosa, on account of its abundant blood supply, is liable to bleed freely after operation, unless a continuous suture is employed. (2) Hematemesis, following stomach surgery, due to interference with a pre-existing and unsuspected ulcer. Such cases are extremely rare but a few have been reported thus far, and have been referred to as traumatic causes of hemorrhage.

Neither of the above are what is commonly understood by "postoperative hematemesis." As ordinarily used it is intended to signify the vomiting of blood following operations upon adjacent viscera, but in which the stomach is not involved.

This is a newly described condition and Rodman, in his oration on surgery at the 1900 meeting of the American Medical Association, was one of the first in this country to call attention to it, although Robson, in England, and Von Elsberg and Dieulafoy on the Continent, had already described cases. Seven cases in the experience of the former, and six and seven by the other two, comprised practically all the published cases, at that time. Rodman, by means of letters of inquiry to fifty representative surgeons of America, learned that only eleven cases had been encountered, and these by nine of the men interrogated.

Since then, many additional instances have been reported. Its occurrence in connection with the operation for appendicitis has excited considerable comment and controversy. Post-operative hematemesis has followed a great variety of abdominal operations such as appendicitis, hernias, operations on the liver, gall-bladder or ducts, the opening of abdominal abscesses, hysterectomy, operations on the kidney, ovarian cysts or tumors, extra-uterine pregnancy, ligature of omentum, etc. It also has been known to follow extra-abdominal operations.

Among the various explanations of the occurrence of vomiting of this character are theories of sepsis, embolism, interference with vasomotor control, changes in the blood caused by the absorption of bile, in gall-duct or liver cases, administration of chloroform or manipulation or traumatism of the viscera, especially the omentum. The use of the Trendelenburg position has been presented as a cause.

Rodman made a few experiments upon dogs, in an endeavor to find the exact cause of these hemorrhages, but was unsuccessful, and in his conclusion attributes them to septic conditions which favor the disintegration of the blood corpuscles and predisposes to hemorrhages from the mucous surfaces. He says: "We have in this, I think, a satisfactory explanation of the rare hematemesis following abdominal operations, and have shown that even violent traumatism to the omentum, intestine, spleen, pancreas and liver, did not produce hemorrhage into the stomach in any of the dogs experimented upon and it does not seem unreasonable to suppose that delayed hematemesis will usually depend upon disintegration of the blood due to sepsis." Gerassimowitch in a very recent contribution upon this subject, arrives at practically the same conclusion. He considers the hemorrhage to be due to toxic changes in the blood vessel wall, with a vasomotor paralysis, a local stasis, and a rise of blood pressure, all of which is usually caused by a septic peritonitis.

The exact cause of postoperative hematemesis is very much in doubt, and a question upon which there is need of a great deal more study, before an accurate understanding will be reached.

A SERIES OF NEARLY SIX HUNDRED SPASMS IN AN EPILEPTIC WITHOUT DISTURBANCE OF CONSCIOUSNESS IN THE INTERVALS.

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A WOMAN, whom I have known as an epileptic since November, 1894, had her first fit in October, 1892, when she was twenty-four years old. A witness of this and other seizures, says that after the attack, she was demonstratively and indiscriminately affectionate and was confused for about an hour. After this first fit she is reported to have slept almost continuously for two or three days. This postparoxysmal behavior is noteworthy, for while it was common in some degree or other up to the time of the numerous series to be hereinafter described, it was not a feature of the latter.

Many of the fits began with flexion of the forearm, which was followed by a turning of the head and eyes to the left. Of the first or both of these movements, the patient was often conscious; she would then lose her senses and the jerking of the limbs became general. The tongue was bitten in some of the seizures, in others the lower lip or the cheek. She might be warned by a vague nervous feeling in time to seek a couch, or be overcome by the attack without a warning and injure herself in her fall. The fits ocurred at various times of the day or night, as many as five in a single night.

The removal of one of her ovaries in February, 1894, by a gynecologist who alleged that it had undergone cystic degeneration, had no effect whatever on the disease. Bromide of strontium which I prescribed, influenced the frequency of the seizures, but did not suppress them altogether. Under the influence of this drug, the daily dose of which had gradually been increased to seven and a half grams, as long an interval as nine months was achieved between fits. Suspension of the bromide was often promptly followed by a fit, and a diminution of the dose also increased the liability to an attack, so that the patient finally refused to restrict the amount to less than the quantity mentioned. She was disfigured by the acne and her nutrition seemed considerably impaired.

Therefore, when bromipin was introduced, it was hoped that it might have the advantages of bromide without the drawbacks. Accordingly it was substituted for the salt on the first day of June, 1901. At first the dose administered was three teaspoonfuls daily. Seizures ocurring on June 7 and on June 22 and 25, and again on July 24. The dose was gradually increased to three tablespoonfuls daily. To the nervousness and insomnia caused by the change from the bromide to the bromipin, was now added great vexation by her discovery that she was pregnant for the second time. Her tendency to convulsions seemed to be culminating when her husband reported to me that in the night from July 28 to 29 she had had nine seizures, after each of which she was immediately conscious. Such an accumulation of seizures surpassed all her previous experiences, but this was only the prelude to a protracted spectacle.

At noon on July 29 I visited the patient at her residence in the country, about twenty miles from town. I found nothing abnormal in her condition except a slight elevation of temperature (99.8° F.). The resumption of her former dose of bromide was ordered, besides three grams of paraldehyde at night. At a quarter to two in the morning of July 30 the fits began again, and by four o'clock in the afternoon 47 of them had ocurred. They varied in duration between forty-five seconds and two minutes. The second fit followed fifty minutes after the first. Five minutes was the shortest interval noted, and commonly fifteen minutes passed between them. The patient felt a premonitory tingling in the left hand from the tips of the fingers to the wrist. A shriek often announced the fit, which began with a turning of the head and eyes to the left; then there was tonic flexion of the left wrist and elbow, the arm rising somewhat at the shoulder, and the left side of the face contracting. The left lower extremity was extended, the foot turned plantarward and pointed inward.

This tonic stage was followed by violent clonic contractions of the left facial muscles, in which, however, the eyelids on both sides participated, and of the muscles of the left upper extremity, while in the left lower limb only a rapid quivering of the muscles was observed. The right limbs were generally not affected at this time; at the most they were involved in a slight degree in the tonic contraction. As soon as the convulsion ceased, consciousness was found to be undisturbed and the patient denied that it had been altered at all during the seizures.

After the tenth attack she complained of a "limp" feeling in the left arm. Later, both extremities became powerless after the fits, power returning more or less according to the duration of the intervals, to be lost again after a fit, until late in the afternoon a flaccid paralysis of the left limbs became well established. Sensation of all kinds in the paralyzed limbs was perfect. The knee-jerks and ankle-jerks were equal on the two sides and were easily obtained. The same was true of the reflexes in the upper limbs. There was no headache. I was present when the patient ate her supper in the evening of the first day after a severe fit in which the right limbs also jerked somewhat. In the intervals there were often slight spasmodic movements consisting in tonic flection of the left fingers or wrist or (more rarely) of the elbow.

Between four o'cleck in the afternoon of July 30 and the same hour of July 31 the fits numbered 87. The right limbs and the right facial muscles were now involved in the spasms as well as the left, and the patient became deprived of motion in all four limbs. Convulsions, from now on bilateral, followed one another somewhat more rapidly than before, the most rapid succession being after one and after three minutes. After the one hundred and nineteenth seizure, the hypnotics and narcotics and other measures having been unavailing, I gave orders to chloroform her. She was kept under the influence of the chloroform for one hour; forty minutes after its withdrawal the one hundred and twentieth fit was added to the series.

In the twenty-four hours ending at 4 P.M., on August 1, eighty-eight attacks were registered. Between the one hundred and fifty-fourth and one hundred and fifty-fifth a pause of 55 minutes afforded some encouragement, but 90 attacks in the next period of twenty-four hours and 96 in still another, permitted no prediction as to the exhaustion of the discharging material. Between corresponding hours of August 3 and 4 the maximum of frequency was reached, 111 seizures having been recorded in the twenty-four hours.

Her condition had now become most deplorable. As has been said, the limbs were motionless; later with the multiplication of attacks she lost power over the movements of the head and when she was lifted the head wobbled. Then her speech become thick. The indistictness of her articulation increased gradually until at length, not being able to utter the whole words intelligibly, she would laboriously spell them. Finally, on August 4, she could not even raise her eye-lids, the act of swallowing grew more and more difficult, then altogether impossible and she had to be fed by the rectum. At last she lay motionless and speechless, her inertness being interrupted only by the spasms. The limbs were relaxed and remained as the convulsions left them; for instance, the forefingers extended, from pressure of the adducted thumbs against them, while the other fingers preserved the position of interosseal flexion.

Seizures followed one another fast and furiously, as many as five occurring in thirteen minutes; but longer intervals were also observed, as many as fifty and sixty-nine minutes elapsing without an attack. For a time a series of three or four or five attacks in very rapid sequence

would alternate with a relatively long pause so regularly that the course of events was in a measure predictable.

On August 5, in the morning, several intervals of over an hour indicated a lessening of the convulsive tendency. By ten o'clock in the forenoon 54 fits had been counted since the last reckoning at 4 o'clock in the afternoon of the day before; then there were no more until five minutes to six in the evening when the five hundred and seventy-fourth convulsion closed the series.

In the bilateral fits the movements of the left upper extremity generally preceded those of the right a little. Head and eyes invariably turned to the left at the commencement of the tonic stage, the mouth opened, the facial muscles underwent tonic contraction; usually the upper extremities were extended and slightly abducted, the forearms pronated, the wrists flexed, the thumbs without exception turned in and caught between the index and middle finger, while the other fingers were flexed in the metacarpophalangeal joints. The abdominal muscles were also rigid in the tonic stage. The lower limbs were extended and the feet flexed plantarward and turned in. There was nothing faintly resembling the "*arc de cercle*." The brief tonic phase was followed by clonic contractions in the face and in the upper extremities, succeeding one another at first rapidly, then after longer pauses. The last contraction in the upper limbs equalled in violence the former ones, so that the spasm of these limbs ended with a fling. The twitchings in the nether extremities were quick, short, almost tremor-like. A cork was inserted between the teeth at the approach of a fit; nevertheless the lower lip and the mucosa of the cheek were often bitten and the tongue twice, once quite deeply on the right side. At the close of the clonic spasms the patient emitted a snoring or snorting noise and foamed at the mouth.

The pupils dilated at the onset of an attack. In the intervals they were narrow, but reacted distinctly, until August 4, when reaction to light was hard to determine, clearly because of the tendency to roll the eye-balls upward. On August 2, with a strong endeavor she succeeded once in moving the right big toe and the left forefinger. After her articulation had become difficult a great effort would now and then produce a short, plain utterance, as when at the approach of a fit she called out to some one: "Get off the bed." At no time could a plantar reflex be obtained. From July 30 on, the ankle-jerks and radius and elbow-jerks were very faint, while the knee-jerks in the interval between fits remained brisk. But when the knee-jerks were tested immediately after the fits, that is to say, as soon as the limbs were relaxed, they were found to be absent for about one-half to one minute, and gradually regained their vigor. Sensation, the optic disks, and the urine presented nothing abnormal. In some of the later attacks urine or feces was passed involuntarily. The temperature did not rise above 101° F.; the pulse-rate was rapid, 120 to 140 much of the time, owing, no doubt, to the agitation of the convulsions.

While the attacks were unilateral it was not surprising that they did not affect the mental condition; but the absence of any affection of consciousness or of the intellectual or emotional state, after the body had been racked by hundreds of bilateral convulsions, impressed the observers as something extraordinary, one of them at least to the extent of making him doubt the epileptic nature of the seizures. Even after the most protracted of all the fits, the three hundred and seventy-fourth, which is stated in the nurse's record to have lasted four minutes and which was probably one of those in which the patient bit her tongue, the very vigilant nurse did not observe any delay in the manifestation of consciousness.

Sleep occurred normally or was induced by hypnotics. It was very frequently interrupted by the convulsions, after which the patient was fully awake, and it could at no time be mistaken for an epileptic torpor.

Before the last fit of the series had occurred the power of swallowing had returned in a good measure. The recovery of speech followed. By August 6 she could move the lower limbs and had a good grip with the right hand. As late as August 11 the movements of the left hand were awkward and when the left forefinger was to touch the point of the nose it went wide of the mark. The stereognostic sense was preserved. The right hand had gone through a similar disturbance before it completely recovered. All functions were finally restored. On November 22 the patient had a fit of the kind that prevailed before the series and since then she has been having a few of them in the course of a year, living under the protection of bromide.

To readers of the recent works of L. Pierce Clark and Spratling the foregoing will present nothing new. But to the general medical reader it may be offered as illustrating how multitudinous seizures may fail to impair consciousness in a disease in which the individual attack is usually attended with its disturbance or loss, as exemplifying in a remarkable degree the exhaustion paralysis of epilepsy, and as a warning of the danger which may arise from too rapid a diminution of the sedative control exercised over the epileptic brain by bromide.

Unionism in Medicine.—At a meeting of the Physicians' Club, held October 20, this subject was discussed by several physicians and laymen. Dr. Alfred C. Croftan believes in a united profession, but not in a unionized one. Dr. George F. Butler said the labor unions believed in high wages for their members, but patronized advertising charlatans and encouraged cheap and unskilled labor in the medical profession. The principal objection to the union idea was that it implied the regulation of prices, while nearly all the practitioners who spoke agreed that they were in the profession solely for the benefit of humanity.

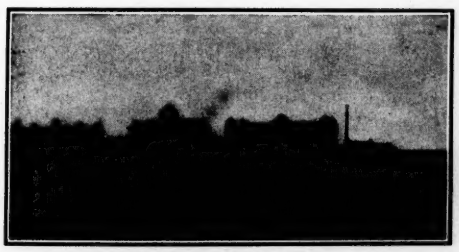
THE AGNES MEMORIAL SANATORIUM.

A DESCRIPTION OF A SANATORIUM FOR THE TREATMENT OF PULMONARY TUBERCULOSIS, BUILT BY MR. L. C. PHIPPS, AT DENVER, COL.

BY CARROLL E. EDSON, A.M., M.D.,
AND
W. H. BERGTOLD, M.SC., M.D.,
OF DENVER, COL.

THE AGNES MEMORIAL SANATORIUM has been erected at Denver, Col., by Mr. Lawrence C. Phipps, of Pittsburg, as a memorial to his mother. An attempt has been made to have it in every detail the most thoroughly built and equipped institution possible, and Mr. Phipps has spared no expense to this end. An account of the plans and construction of the sanatorium may therefore be of interest. Mr. Phipps having determined upon building for this memorial a sanatorium for the care of persons of small resources suffering from pulmonary tuberculosis, purchased a large tract of land in the suburbs of Denver. In April, 1902, he laid his plans before the gentlemen whom he later asked to be the trustees of the sanatorium, which is incorporated under the laws

FIG. 1.



General View.

of Colorado as a permanent charity, and before the physicians whom he had selected for his medical board.

The members of the medical board, being asked to make all necessary suggestions as to the details and requirements of such a sanatorium, gave their enthusiastic attention to this work and recommended: That the institution be conducted as a closed sanatorium for the open-air treatment of persons of small means suffering from incipient pulmonary tuberculosis; that it be, not a home or refuge, but restricted to cases of early disease in persons whose return to wage-earning is urgent, and whose condition offers prospect of such arrest of disease or amelioration within a short period as to permit of such return; that the institution should be planned to give such persons, for a period of six months or so, the very best opportunity for outdoor living, physical quiet, abundant nourishment and medical oversight at a small cost; that the sanatorium also be not only therapeutic, but educational, the patients being taught how to take proper care of themselves after leaving.

After long and careful consideration, the medical board reported, on November 14, 1902, to Mr. Phipps detailed suggestions and specifications as to the arrangement and construction of the buildings. These recommendations have been closely followed in the main, Mr. Phipps making from time to time some changes in the way of addition to the simpler ideas of the board, but in no way affecting the general plan as first laid down. The specifications were given to the architects, Messrs. Gove & Walsh, of Denver, in November, 1902. These gentlemen have in every way most cordially cooperated with the medical board, and subordinated their architectual ideals at all times to the medical demands.

During the winter of 1902-3, the detailed plans were worked out by the architects and physicians with great minuteness, and ground was broken in May, 1903.

The erection of the buildings since then has been under the direction and in the hands of the building committee of the board of trustees, which was organized in January of that year.

The land comprises forty acres, upon high ground, seven miles east of the city of Denver, and well situated so as to be wholly free from smoke or future crowding. One hundred and twenty acres additional to the east and south are owned by Mr. Phipps, and while at present used as a ranch in connection with the sanatorium, may be drawn upon for future needs. The site is on the line of the electric cars, giving easy access from the city, and the elevated ground commands an uninterrupted view of the mountain range to the west—one hundred and fifty miles from Pike's Peak to Long's Peak, and of the plains to the east. The view from the tower of the administration building extends over more territory than the entire State of Massachusetts. The land slopes gently to the east, south and west, and is the usual prairie oversoil with a gravelly subsoil giving good drainage. The water supply is ample, furnished by the excellent city water of Denver, and by an artesian well 750 feet deep, upon the grounds.

It was decided for reasons of economy in administration, especially of ease of heating in winter, to adopt the pavilion system at first, and to increase the capacity, if desired later, by the erection of cottages from time to time. The buildings are now planned to accommodate eighty patients; the administration plant, kitchen, etc., being arranged for an increase to one hundred and fifty patients, which is considered the maximum number desirable under one control.

There are at present five buildings—an administration house, two pavilions for patients, a medical building and a power and laundry plant. The main buildings are in a line, the administration building between the two pavilions and a little behind them, while the medical building is to the north of the north pavilion. The power plant is 300 feet east of the rear of the main building.

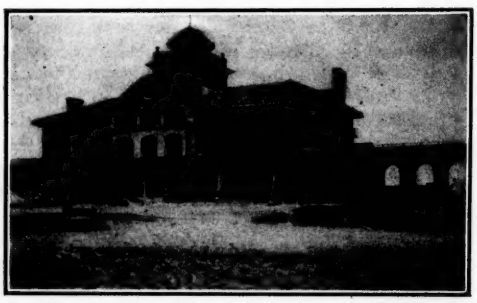
The orientation was most carefully considered

in regard to sun and wind, both the prevailing and the storm wind, and in view of the needs of both winter and summer life. The buildings face west-southwest, save the medical building which is squarely on the compass. This arrangement was expected, as it has been found to do, to give every room direct sunlight every day in the year, and to provide sunlight on the verandas of the pavilions all day in winter, and in summer shade from the warm Colorado sun. The working out of this arrangement took much time, but has been very successful, as will be shown in the detailed description of the sleeping pavilions.

The buildings are all of brick, covered with cement, and roofed with red tiles, the general effect being that of the Spanish Mission so well suited to the western sun and landscape. The buildings are all connected by open cloisters, and below ground by a dry, well-lighted subway for use in administration work or very stormy weather. There is a full cemented and plastered cellar under every building.

The lighting is by electricity, generated in the

FIG. 2.



Administration Building, showing Sun Rooms and Open Cloister.

power plant, and the heating is the "direct-indirect" system of air over steam coils, to be described in connection with the pavilions. In addition, all rooms used for general assembling have open fireplaces.

The Administration Building, in the center, is 139 by 40 feet, and three stories high, with a two-story ell 51 feet deep. It contains the offices, the library, parlors and dining-room for the patients, the kitchen and pantries, and the living apartments for all the employees, from the Medical Director down.

The cloister connecting the pavilions runs directly in front of the main building and is here shut off by glass doors to make a vestibule. Entering the center hall, the dining-room, 60 by 40 feet, is on the right, where it has the full benefit of the morning sun on the east and south, the afternoon sun being to some extent shaded by the cloister on the west side. On the left are two reception rooms, 15 by 18 feet, in which patients may meet their callers, it being the intention to allow no visiting in the sleeping pavilions. Across the side hall on the east from the reception rooms are the office for the clerk, where patients will transact their business and receive mail, and the private office of the executive superintendent. The clerk's office opens also by a door to the rear of the building, giving easy access for delivery men to present bills of lading, etc., or for outdoor employees to do business without coming through the house. The north end of the first floor is given to the library, 20 by 40 feet. In the rear wing are the superintendent's family dining-room, the sewing-rooms, kitchen, pantries, refrigerator rooms and a dining-room and sitting-room for the servants. In the basement of this wing are the vegetable cellars, bake-ovens for bread, and the storerooms, entered from outside on the north.

The second floor is occupied on the north wing by the superintendent's and house physicians' rooms, on the south wing by the linen-rooms, sewing-rooms and quarters for the matron, housekeeper and nurses. In the second story of the rear wing are sleeping rooms for the servants, the necessary attempt at separation of the sexes being made by dividing the corridor by a solid wall, so that the women's rooms are wholly apart from the men's.

The third story of the main building was added for architectural effect, and advantage was taken to use the south end for an assembly hall, 40 by 60 feet. This room is one and one-half stories high, the ceiling being vaulted to the roof—the double row of windows and dormers giving ample ventilation. It will serve for occasional lectures and concerts. Objection may be made to this room being on the third floor, but the stairs throughout the sanatorium are of very easy rise and tread, and a patient unable to go up to the hall ought not to be at any entertainment.

The north end of the third floor gives extra room for an increase in the number of employees.

In front of the administration building, separated from it by the cloister, are two large sun-rooms, 38 by 24 feet, for use in severe cold or occasional hard storms in winter when a porch is too exposed. The sides are wholly of glass in French windows, and the rooms are shut from the open cloisters by glass folding doors. The rooms are thus open on all sides to light and sun, while they may be protected from the wind wholly or on any side as may be needed. They are amply ventilated aside from the window openings.

The cloisters running between all the buildings are covered passages with wide open arches of seven feet span. The piers are less than three feet wide. Throughout, these cloisters are wholly open, giving free circulation of air. The purpose of the medical board, throughout all the construction, was to do away as far as possible with confining walls, and to secure the greatest abundance of light and air, at all times. In case of severe storm, the corridors under the cloisters

may be used by the more delicate patients in passing from the pavilions to the dining-room. These passages are dry and well lighted, and serve to carry the steam, water and wire pipes.

The Pavilions, which are the essential working parts of the institution, are on either side of the main building, 70 feet distant each, and 50 feet in advance. They are 160 by 65 feet, counterparts, each two stories high, the upper story in all details like the lower. Each pavilion accommodates forty patients.

The bedrooms are all of the same size and arrangement; 11 feet wide by 16 feet deep, a closet three feet deep being taken off at one side of the inner end, making the main room 11 by 13 feet. All the rooms are 11 feet high. Over the door leading to the ante-hall is a transom serving to light the corridor, which is 8 feet wide, and to allow cross airing if wanted. Opposite this door is a window 38 by 78 inches, and next the window a door opens on to the veranda. This door is glassed, and is 4 by 7 feet, with a glass

FIG. 3.

Pavilion (north).

light above, 41 by 20 inches, so that, practically, the whole veranda end of the room is window, admitting abundant sunlight, which strikes completely across the floor of every room at some time during the day.

It will be noticed on the plan that the window of each room is opposite the inner door and transom, permitting full airing across the room, but leaving the bed, which stands opposite the outer door, out of the draft, also, that the doors of rooms across the hall are not directly opposite each other, which prevents an undue directness of draft and gives better general ventilation through the hall. This ample means of airing the rooms is, however, only supplementary, the system of heating and ventilation securing a supply of 10,000 cubic feet of air per hour, without the use of door or window. This is obtained by means of the direct-indirect system, so-called, of intake, separate for each room, allows the fresh outside air to pass over through a steam coil boxed under the window inside, and so up into the room. On the side wall, near the base board, is a ventilating register which opens to a flue passing separately for each room to the attic floor, where these flues open into a large shaft around a steam drum. The air suction is steady and sufficient to ventilate the rooms thoroughly and continuously.

The rooms are lighted by electricity, and the closet by globes automatically lighted when its door is opened.

Each floor has a lavatory suite, on the east side at the end nearest the administration building, which is tiled throughout with white porcelain. There are in each suite three tubs, a shower and a sitz-bath, and three water-closet seats, each in a separate room. A chambermaids' workroom, also tiled, and small linen closet complete the equipment on each floor.

The plumbing throughout the whole plant is open and exposed.

The stairways are in the middle of the east side, and are of very easy ascent, the rise and tread being 6½ and 12 inches, respectively. The floors throughout are of hard pine, filled and waterproofed, and the ceilings and walls are finished with a washable surface. All corners and angles in the building are rounded and concaved in the plastering. The dividing walls are double, and made sound-proof by zigzag felting. The bed spaces in adjoining rooms are never against a common wall.

The special feature of importance, however, in the pavilions is the veranda which surrounds the building on all sides. These verandas are nine feet wide, and are intended to serve as sleeping porches at night as well as piazzas by day. The arches, which carry the roof of the building and, therefore, appear structurally as if the outside wall, are very wide and cut clear to the ceiling. The arch space is 12 feet, and the intervening column is but eight inches in diameter. Its corners are cut away, as well as the outer edges of all the arches, so that the least possible obstruction is put in the way of sunlight. The columns, too, it will be noticed, are placed opposite the intervening walls between rooms, so that the whole of every window and door is directly behind the full opening of an archway. In this way no obstruction of light or air is given any room.

A canvas partition is fastened to the wall between each two rooms, and at night is drawn out to the column between the arches, dividing the veranda into porches, 12 by 9 feet; one for each room, giving privacy for the patients, whose beds are rolled from the room through the wide door out upon the veranda. The canvas screens are only eight feet high, so that there is free circulation of air above them along the veranda. Not only do these porches serve as sleeping spaces at night, but should any patient be obliged to keep his bed for a few days for any reason, the screens may be drawn out separating his porch from the general veranda, giving quiet and isolation and permitting him nevertheless to have his outdoor life uninterrupted. The screens may also serve

as partial wind breaks, in case of heavy wind down the veranda, though this protection is secured by the tower corners. At each corner of the pavilion, the veranda is widened two feet into the tower, the arches here are fitted with glass doors, which can be closed, giving a sheltered corner room 11 feet square, open on the two inner sides. These closed corners serve well to shut off the wind down the verandas.

Save in the most rigorous weather for a few nights in the winter, patients may thus sleep out all the year round.

The south end porches on which no rooms open give very sunny sitting places in winter, while the north ends similarly arranged give shady spaces in summer. As the patients here will not go away in the sumer, it was important to provide not only for sun and shelter in winter, but also for shade and coolness from the warmth of the summer midday. The time spent in planning this orientation was well repaid by the working results obtained.

The objection made to verandas around buildings, or in front of sleeping rooms, in most essays upon sanatorium construction, was not unnoticed by the medical board in planning these pavilions. In the intense sunlight of the unclouded sky in Colorado shade is desirable for some patients at all times, and for all during the midday in summer. The diffusion of light being so great, directness is less constantly needed, but it has been found that the porches about the pavilions do not shade the rooms at all too much. The direct sunlight strikes clear across every room at some time in the day. During the winter, the lower sun pours straight into the verandas all day, while in summer it is high enough so that the porches are shady save in the morning and evening.

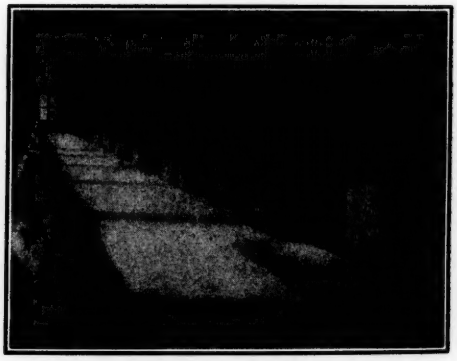
FIG. 4.

Medical Building—Cloister and Pavilion.

The furniture of each room is simple and, so far as possible, without anything to catch dust; it consists of an enamel bed, which can be rolled through the doors upon the porch, an enamel washstand, a dresser, a small table and a chair. The floors are bare but for a small rug at the bedside. A call bell communicating with the nurses' room and light-button are at the head of the bed, and on the veranda a drop wire gives opportunity for light in each porch section in case of need when the patient is sleeping out. During most of the time, the bedroom will really serve only as a comfortable dressing room.

The Medical Building, which faces on the four points of the compass, is at an angle with the north pavilion, and thus falls back out of view in the full face of the general plan. It serves for the scientific work of the institution and for a hospital for any cases of acute illness which may arise and call for special nursing. It is 50 by 57 feet. The first floor is given to the scientific work. A reception room, 15 by 17 feet, is entered from the hall on the left. This opens into the consultation room, 30 by 15 feet, where the physicians have their desks, records and library. From this room opens along the north side of the building, a series of rooms: First, a small, quiet room for chest and physical examinations, then a room for throat treatment, and, lastly, on the northeast corner, a clinical laboratory, 18 by 15 feet. These rooms can be entered each from the hall or directly from each other. The throat and chest rooms were made separate from the consultation room to allow undisturbed examination or treatment of two patients at the same time.

FIG. 5.



Sleeping Porch.
At time of taking photograph the canvas partitions were not in place.

The clinical laboratory has a large north window for microscopical work, sinks and chemical hoods, and is thoroughly equipped with every appliance for scientific clinical work. In connection with the laboratory, there is in the basement a large, well-ventilated room for experimental work on pigs or rabbits, and a small autopsy room, which, it is hoped, may never be used.

A room arranged for X-ray work and a commodious dark room for photographic work, fill the eastern side of the building, and a small drug room for medicines and supplies completes the first floor.

A stairway made especially wide for carrying

a stretcher leads to the second floor, which is for hospital uses. A small diet kitchen, a small operating room, sufficient for such emergency work as may arise, are on the north side. A commodious bathroom is fitted with a tub in the center of the room for convenience of the nurse getting at the patient. There are six rooms, 11 by 15 feet, for patients, one being arranged for isolation in case of need. On the south side, built out over the cloister, is a large sun room for semi-convalescent patients, and the roof of the cloister beyond offers a still more open place for reclining when returning strength permits.

The power plant is 300 feet from the rear of the main building. It is 113 by 40 feet, with an ell 59 by 28 for the laundry. The main building contains the boilers and steam plant, electric generating dynamos, fire pumps and refrigerating machine. The laundry room is equipped with modern machinery, all the laundry material being sterilized by steam before delivery to the laundry room proper. The chimney stack is 100 feet high.

In connection with this building is an incinerating furnace for sputum and garbage.

The drainage of the institution is carried for the present, as the city sewers do not yet extend to the site of the sanatorium, to the east of the buildings in two sets of three series of settling cess-pools, which are dug deep into the loose gravel, draining away from the institution. The outflow is ample, as proved by tests.

APPENDIX I.

The Report of the Medical Board, made November 14, 1902, upon which the plans were drawn:

The Medical Committee, appointed by Mr. L. C. Phipps, October 27, 1902, to examine the plans presented, and to make all necessary suggestions as to the requirements of a sanatorium for tubercular patients, respectfully submit the following suggestions:

1. That the institution be considered a "closed sanatorium," non-sectarian, admitting both sexes.

2. That a uniform rate be charged, this rate to include board, lodging, and ordinary medical attendance, but not to include medicines, laundry, special operative work or special nursing.

3. That the sanatorium in no sense be considered a "consumptives' home," in the ordinary acceptance of the term. It should be an institution where patients with slight disease (incipient cases), can be sent with a hope of cure, or of such amelioration of symptoms that they may become wage earners again.

4. That it be, moreover, an educational institution where the patients are taught the simple but important laws of hygienic living, with special reference to their disease and the protection of others.

5. That the sanatorium be for the open-air treatment of patients, that every part should be extremely well and independently ventilated, readily cleansible without raising dust, as regards the patients' quarters, freely open to the sunshine, while sheltered from the wind.

6. That the sanatorium be built on the "pavilion plan," with an annexed "cottage system" later if deemed desirable."

7. That the first buildings be planned to accommodate not over eighty patients, forty to each two-story pavilion, the upper floor of one pavilion to be devoted exclusively to women, namely, 20. The maximum capacity of dining-room and kitchen to be built for the accommodation of 125 patients.

8. The Committee would advise that the sanatorium include the following buildings: (1) One administration building, (2) two pavilions, (3) medical building, (4) infirmary, (5) building for laundry, lighting, and heating plants, (6) amusement pavilion, (7) medical director's residence, (8) stable, (9) cottages when required.

9. The Administration Building should have the following rooms: *First Floor.*—Two reception rooms, one general dining-room, staff dining-room, superintendent's office, clerk's office, library, serving-room, kitchen. Cold storage for meats, vegetables, milk, butter. Small dining-room for help. *Second Floor.*—One matron's sitting-room, one matron's sleeping-room, one linen and sewing-room, one superintendent's room, nurses' rooms, rooms for superior help.

10. *Pavilions.*—The main front of the pavilions should face southwest. Each pavilion should not be over two stories high, with covered verandas on each floor around entire building; each floor to have sleeping rooms for twenty patients; each floor to have a bathroom containing three bathtubs and bowls, three seats, two urinals and one sitz-bath; each floor to have a closet for slop-hopper, with hot and cold water; each floor to have a linen closet, etc.; each floor to have a closet for soiled linen basket; each floor to have provision for collecting sputum cups; each floor to have a closet for brooms or mops; each pavilion to be provided with corridors not less than nine feet wide, amply lighted and ventilated.

11. *Medical Building—First Floor.*—One reception room for patients (to have double doors between reception and consultation rooms); one consultation room, with doors like the preceding; one chest examination room; one closet for washbowl, one nose and throat room, one X-ray and photographic room, one clinical laboratory, and one drug room (both to have running water). *Second Floor.*—One house medical officers' sleeping-rooms, house medical officers' sitting-rooms; extra bedrooms for visiting physicians, one toilet room with bath, and seat.

12. *Hospital Building—One Story.*—One nurses' room, one reception room, ten sleeping rooms, to open on covered veranda, one to be arranged for isolation room; one toilet room, with bath, bowl and seat; one diet kitchen, one linen closet, one closet for slop-hopper and cleaning rags, one operating room (small), one mortuary in basement.

13. *Amusement Pavilion.*—To be a separate pavilion, something after the order of the pavilion at City Park. A large open pavilion capable of being closed for entertainments, if necessary, by means of a system of windows. At each end of the pavilion would suggest having a room, one for men, one for women. Also to have one toilet room for men and one for women.

14. Laundry, lighting, power, heating, and disinfecting plant all included under one roof. This building to be as far away from main buildings as compatible with efficient service. Laundry to be furnished with most approved machinery. The disinfection plant to be in a separate room, but to communicate with laundry.

15. *Power Plant and Stable.*—To be a suitable distance from buildings.

16. Every part of the sanatorium should be so constructed as to facilitate cleaning; all corners should be rounded, and unnecessary ledges avoided. All construction to be of the simplest durable nature. A well-lighted, dry cellar under all large buildings, with trunk rooms and storerooms. A brick conduit from power plant to main buildings for heating pipes, etc., large enough to admit the passage of a man throughout its course. The stairs in the different buildings to be built wide, having easy treads and rises. Each building to be provided with an electric call system in each room and on each floor. All buildings to be wired for telephone communication with administration building and medical building. Full fire protection on each floor for every building.

17. All windows and doors should be so constructed as not to clatter when the wind blows, or admit drafts from any possible shrinkage of woodwork after construction. Window sills to be rounded. Each room to have one door and one large window opening on to the veranda. The door should be wide enough to roll a bed through upon the veranda. Rooms should not be less than 12 by 14 feet; height of rooms on first floor not less than 10½ feet; height of rooms on second floor not less than 10 feet. All woodwork to be of hardwood, well filled and varnished or painted. Each room to have a closet, the floor of which should not be sunk below the floor of the room, and the interior to be made as carefully as that of the room itself. No transoms over the inside doors. No plumbing in rooms.

18. Verandas and covered balconies are an essential part of every sanatorium for consumptives, so arranged as not to darken the patients' rooms. To properly shelter the patients, the veranda should be 10 feet wide. The veranda floors should be so constructed as to properly shed water. Each sleeping-room to have a corresponding amount of veranda space, such space being separable by a properly adjusted canvas wall or curtain, stored in wall niche. The veranda front to have a solid wall with coping 2½ or 3 feet high. All doors and windows to be screened. All floors to be double floors of polished hardwood, either varnished, waxed or covered with a paraffin composition. Cracks and joints should be, as far as possible, avoided. Floors to be deadened. In bathrooms, washrooms, laboratory, kitchen, laundry, disinfecting room and corridors connecting buildings, cement, artificial stone, vitreous tiles, or "torgament" may be used, first having the space between beams filled with concrete.

19. All walls should be extra thick and deadened to prevent one patient from being disturbed by the coughing of another. Walls and ceilings must be of washable surface.

20. Artificial lighting should be by electricity, as other methods add to atmospheric impurity. All buildings should be wired for electricity and piped for gas in all rooms but the sleeping rooms.

21. Ventilation of rooms should be as perfect as possible. Each person should receive not less than 10,000 cubic feet of fresh air per hour while in a closed room. The impure air removed by shafts and heated central well.

22. The committee would recommend indirect heating, as this system seems to be the most efficacious in removing impure air and admitting fresh air. Hot-water heating is worthy consideration. All general gathering rooms to have open fire places.

23. The water-carriage system, with suitable cesspools. The water-pressure must be high enough to properly flush all pipes. If possible connect with city system. Provision must be made for living quarters for help. Sexes to be separated.

APPENDIX II.

Board of Trustees of the Agnes Memorial Sanatorium.—C. S. Morey, President; John Campion, W. S. Cheesman, T. S. Dines, C. J. Hughes, Jr., J. G. McMurtry, Treasurer; J. H. Sawyer, Secretary.

Medical Board of the Agnes Memorial Sanatorium.—Arnold Stedman, M.D., Chairman; W. H. Bergtold, M.D., Carroll E. Edson, M.D., J. A. Wilder, M.D., Secretary; L. B. Lockard, M.D.; G. W. Holden, M.D., Superintendent and Medical Director.

MEDICAL PROGRESS.

MEDICINE.

Determination of Different Forms of Albumin in Urine.—The ingenious method of determining the percentage of the different forms of albumin in nephritic urine, devised by A. OSWALD (*Münch. med. Woch.*, August 23, 1904) depends upon the addition of various amounts of saturated solution of ammonium sulphate. Four Esbach albuminometers are selected and marked A, B, C, and D. In A, the entire amount of albumin is precipitated in the usual way with Esbach's reagent. The remaining tubes are then filled with urine up to the mark U; tube B then receives 2.8 c.c. of ammonium sulphate solution to 7.2 c.c. of urine, tube C 3.6 c.c. to 6.4 c.c. and tube D 5 c.c. to 5 c.c. Each tube is allowed to stand for twenty-four hours and the

precipitate then collected on a filter, dissolved in water poured into an Esbach tube and precipitated for quantitative determination with Esbach's reagent. The precipitate derived from tube B will equal the amount of fibrinogen or fibrinoglobulin, that from tube C minus B, the percentage of euglobulin, tube D minus C will equal the percentage of pseudoglobulin while the proportion of serum albumin is obtained by subtracting D from A. In a number of cases of nephritis examined serum albumin was always most abundant, then came pseudoglobulin and finally euglobulin, while fibrinogen was absent in all.

Complications of Polyarticular Rheumatism.—In the analysis of a large number of cases, P. Harrass (*Münch. med. Woch.*, August 30, 1904) finds that about 2.2 per cent. of all hospital cases are admitted for articular rheumatism. The greatest frequency is noticed between sixteen and twenty years and the sexes are affected about equally. In 26 per cent. an angina preceded the attack and recurrences were noticed in 39.7 per cent. Complications were observed in 57 per cent., but more frequently among women than men. The great majority of complications (51.7 per cent.) were cardiac and mitral insufficiency was the most frequent lesion observed. Pericarditis was observed in 1.7 per cent, less frequently erythema nodosum, pneumonia, chorea minor, psychical disturbances and nephritis. The mortality was 1.7 per cent., the cause of death being pneumonia and nephritis secondary to loss of compensation.

Paroxysmal Hemoglobinuria.—The hemolysis seen in paroxysmal hemoglobinuria is explained by V. Donath and K. Landsteiner (*Münch. med. Woch.*, September 6, 1904) as due to the absorption of a toxic body when the blood is cooled off. The solution of the cells then occurs when the blood is again warmed through the agency of a complement which is also present in normal serum. The process can be easily imitated by cooling and again warming the blood in a test-tube.

Alkaptonuria.—A masked case of alkaptonuria was detected by O. Schumm (*Münch. med. Woch.*, September 6, 1904) in a young man, twenty years old, whose antecedents and family history were absolutely negative. Though the patient's family was large, only one sister also excreted alkapton, without being in any way aware of the condition. The specific gravity of the urine varied between 1.021 and 1.030, polarized light was not affected and yeast did not cause fermentation. Indican, urobilin and uric acid were present in normal quantities. Immediately after passing, the urine was acid, and of normal yellow color, but it soon turned brown, even before ammoniacal fermentation set in. Upon the addition of lye, the upper portion became brown in a few seconds. Alkaline copper and ammoniacal silver solution were reduced with heat and on boiling with Nylander's solution, a brown precipitate was thrown down. Dilute chloride of iron added drop by drop, gives a transient blue color. Alkapton may be isolated by adding one-tenth the quantity of 20 per cent. sulphuric acid, evaporating to one-tenth the volume and extracting the residue with ether. On distilling the ether, a syrupy residue will remain, which soon crystallizes and from which homogentisic acid can easily be obtained pure. Even the excretion of as much as 80 grams of this acid daily did not interfere with the patient's well-being. According to modern views, alkapton is a decomposition product of albumin, which is still further burnt up in the normal individuals, but in certain rare cases, is excreted as such, without actually constituting a disease. Increased ingestion of albumin will thus increase the excretion of homogentisic acid. Rarely the condition is but temporary, as with some febrile disturbance.

OBSTETRICS AND GYNECOLOGY.

Results of Induced Labor.—Induction of premature labor in case of pelvic contraction has been condemned by many obstetricians because of the high fetal mortality. R. C. Norris (*Am. Jour. Obstet.*, September, 1904) is in accord with such teaching when the true conjugate is 7.5 cm. or less in a generally contracted pelvis or 7 cm. in the flat pelvis. When the conjugate is between 8 cm. and 10 cm., skillfully induced labor at the latest permissible period of pregnancy, has an important place. A delayed labor with the history of a previous difficult forceps delivery at term and even the avoidance of perineal lacerations likely to follow a breech extraction in a first labor with a normal pelvis, have been advanced as justifiable indications for Cæsarean section. The proper indication of labor finds its field of usefulness in almost all of these cases without resorting to Cæsarean section. To accomplish the best results after the induction of premature labor, the usual causes of failure, as far as possible, must be eliminated. These are the interruption of pregnancy earlier than the degree of contraction demands, or at too late a period, necessitating operative delivery of a premature child. An accurate determination of the degree of prematurity is important. The possibility of conception having occurred in the premenstrual and not in the usual postmenstrual days, may be a source of error of two to three weeks. When in doubt, if the relative size of the child's head will permit it, the induction of labor should be postponed a week or ten days from the date selected. Instrumental methods for determining the relative size of the head to the pelvis are inaccurate. Manual engagement of the head depends for accuracy upon individual skill and experience but is the most reliable. The average infant's biparietal diameter at term is 8.25 cm., a diameter that will usually pass a conjugate of 8 cm. The most satisfactory method of inducing labor consists in the proper introduction of a bougie, dilatation of a cervix, if necessary, and then the insertion of the largest size Voorhees bag upon the stem of which more or less continuous traction is made by means of a cord and weight. When the bag can be drawn through the cervix with gentle traction, instrumental delivery or version and extraction, if indicated, can be immediately performed when necessary.

Bathing During Menstruation.—It is the traditional belief of both profession and laity that it is advisable to omit bathing during the menstrual period. Customs among primitive people in regard to the bath during menstruation are much the same as those generally in vogue among the women of to-day. During the past ten years many physicians have either advised or sanctioned some form of bathing during this period. J. C. Edgar (*Am. Jour. Obst.*, September, 1904), believes, that women of ordinary strength and health are able to bathe during menstruation, following certain simple precautions, not only without any injury but with marked addition to personal comfort and benefit to general health. While there may be a certain amount of risk of infection of the uterus in tub bathing, the great harm obtained is by chilling

of the surface in improperly applied baths. All forms of bathing during the menstrual period are largely a matter of habit and usually can be acquired by cautious and gentle progression. Surf bathing, when the body surface remains chilled for some time, should always be excepted. A daily tepid sponge bath (85° to 92° F.) during the menstrual period is not only a harmless proceeding, but is demanded by the rules of hygiene. After the establishment of the menstrual flow, on the second or third day, a tepid tub or shower bath is a perfectly safe practice and can be acquired without risk in most women.

PHYSIOLOGY.

Absorption of Foreign Albumin from the Gastro-Intestinal Tract.—It is a strange fact, discovered by D. GANGHOFER and V. LANGER (*Münch. med. Woch.*, August 23, 1904), that foreign albumin introduced by mouth is partially absorbed as such by the gastro-intestinal tract of young animals up to the end of the first week of life. The same observation has been made upon the human infant for a somewhat longer period of time. The alimentary tract of older animals is impervious toward albumin of other species unless an excessive amount is ingested or the lining epithelum is the seat of an anatomical lesson or a mere functional disturbance. The absorption of unaltered albumin is followed by the production of antibodies which may be responsible for the general emaciation always noticed. The conclusions to be derived from these observations are that in very young infants and older children suffering from gastro-intestinal disturbance, only human albumin will be tolerated.

GENITO-URINARY AND SKIN DISEASES.

Etiology of Eczema.—Despite all that has been written and said about eczema, the etiology of this most-common skin disease is still obscure. E. v. DÜHRING (*Münch. med. Woch.*, Sept. 6, 1904) cannot share the view of Unna, that eczema is primarily a parasitic disease for the vesicles of the early stages have time and time again been proven sterile and even inveterate cases will sometimes heal with treatment which is directly opposed to all rules of asepsis. Most likely a specific predisposition combined with a local or general irritation are the underlying causes and more good can generally be accomplished by attention to diet and mode of life than by antiseptic local dressings. There is a distinct relationship between skin and the internal organs, thus an eczema of the head, when treated energetically will sometimes be followed by compensatory hyperemia of the brain, manifesting itself in convulsions, and an intercurrent attack of diarrhea, will frequently improve an eczema of the body.

THERAPEUTICS.

Treatment of Insipid Diabetes.—In a typical severe case of diabetes insipidus, B. STEIN (*Münch. med. Woch.*, September 6, 1904) has tried a number of different therapeutic measures with the following results: Change in diet did not decrease the amount of urine while it made the patient very uncomfortable. Decreasing the amount of fluid ingested was also a failure since severe nausea, vertigo and weak pulse were the result and the amount of urine dropped only from ten to eight liters. Cold baths were refreshing but warm water, applied in the hopes of stimulating diaphoresis, was not borne well. Preparations of valerian, large doses of antipyrin, the bromides, arsenic, sodium kakodylate, mercury, and the iodides did not make a lasting impression upon the disease, but good results were finally seen from small, gradually increasing doses of strychnine, injected subcutaneously. Polyuria and polydipsia disappeared in three weeks and the patient rapidly gained in weight.

PATHOLOGY AND BACTERIOLOGY.

Action of Fluorescent Substances on Normal and Hemolytic Sera.—If rabbit serum which dissolves the erythrocytes of some other blood, be mixed with a small amount of eosin solution and exposed to sunlight, it will completely lose its hemolytic properties in a short time while control mixture not exposed to the light, or serum exposed to light but not containing any eosin, will behave normally. If normal rabbit serum is added to the tubes which contain eosin and which have been exposed to light, hemolysis will eventually take place, showing that the expanse has destroyed the complement of the serum without affecting the amboceptors. The complements are therefore influenced in the same way as the toxins of diphtheria and tetanus bacilli. It is probable that the complements will also be destroyed in the circulating blood under the influence of eosin and sunlight.

Oxidizing Action of Fluorescent Substances.—According to D. EDLEFSEN (*Münch. med. Woch.*, September 6, 1904) the peculiar germicidal action of fluorescing substance is solely due to oxidation. The chemical best suited to prove this is beta-naphthol, since it is easily oxidized and its oxidation product can be readily detected. If quinine or eosin is mixed with beta-naphthol solution and then exposed to sunlight, the naphthol will be oxidized into beta-naphthochinon. This will give a bluish-green color if a few drops of resorcin solution and ammonia are added, changing into cherry red with nitric acid. A similar mixture kept in the dark even for days does not give this reaction. One of the strongest fluorescing substances and hence, oxidizing agents in sunlight, is azoresorufin.

SURGERY.

Prevention of Post-Operative Intestinal Paresis.—The behavior of the bowels the first few days after laparotomy is always a source of concern to the surgeon. D. H. CRAIG (*Am. Jour. Obstet.*, September, 1904) advocates the use of eserine salicylate hypodermatically in all cases of intra-abdominal operation Belonging to the groups of spinal depressants, eserine lessens or inhibits the inhibiting impulses ordinarily sent to the intestinal musculature through the splanchnics as a reflex result of peripheral irritation. If given in full dose (one-thirtieth gr.) at the time or immediately after opening the abdomen, the muscular and nervous mechanism of the intestine will be left in practically the same condition as before operation, in this way intestinal paresis is prevented. In many cases the bowels move in from twelve to forty-eight hours after operation, an absence of any movement during this period indicates thoroughness of preparation. A patient should be carefully watched for signs of intestinal paresis after the administration of eserine for the drug may fail because of poor preparation, too old a preparation, or because of idiosyncrasy on the part of the patient. Eserine cannot be expected to wholly overcome the paresis due to sepsis. When the drug fails, the possibility of mechanical obstruction should be borne in mind.

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PRACTICAL DIPHTHERIA SERUM THERAPY.

There are very few physicians now and fortunately the number is growing ever fewer who are not fully convinced of the efficacy of diphtheria antitoxin for the treatment of what used to be considered the most fatal of children's diseases.

Notwithstanding the almost universal agreement as regards the use of serum there are still marked divergences of opinion as to the amount to be given, the repetition of the dose, the necessity for other treatment and the care of convalescence. Not a little light was thrown on all these questions at the recent meeting of the New York State Medical Association, as can be seen from the proceedings printed in this week's Medical News (see page 858). There have been other contributions to the subject, a review of which in connection with the discussion of last week may prove of special interest at this time when we are entering on the period of greatest seasonal frequency of the disease.

All are agreed now that the initial dose of the diphtheria antitoxin must be much larger than was suggested a few years ago. One thousand five hundred antitoxic units was considered a greater dose than was needed in the average case five years ago. The American Pediatric Society's committee limited the first dose except in large children and severe cases to 2,000 units. Now every one commends 3,000 units as the least that should be given and 5,000 units if the case presents any serious feature. Even from this point the standard has an upward rather than a downward tendency. 10,000 units are suggested as not too large in severe laryngeal cases, or at least 5,000 units repeated in a few hours.

The question of dosage does not depend so much on the age of the child as on the severity of the symptoms. Even for an infant, if there are threatening symptoms of extensive nasal or laryngeal involvement, 5,000 antitoxic units should be given at once, to be repeated at the end of twelve hours if there is not a prompt abatement of the symptoms. Repetitions of the original dose depend entirely on the effect that is secured. If there is a drop in temperature, relief of breathing, a quieter pulse and generally a more comfortable condition, especially if the membrane assumes a granular appearance and begins to disintegrate or clear up, the dose need not be repeated. If these favorable changes are not noted, however, then delay beyond twelve hours in renewing the attempt to neutralize the diphtheria toxins present in the circulation is of serious significance and means the assumption of an undue responsibility on the part of the physician. If in doubt when there has been but a partial reaction and only a slight remission of symptoms, it is better to be sure than sorry and repeat the dose.

For the repetition of injections the same rule holds as with regard to the administration of the initial dose. Whenever there is a well grounded suspicion of the presence of diphtheria, especially if it occur in a child not over strong or if the symptoms are at all threatening, antitoxin should be administered at once without waiting for the bacteriological diagnosis. Even if the affection proves to be non-diphtheritic, no possible harm can be done and the contingency of subsequent urticaria cannot be permitted to weigh in the balance against the immense advantage of the early administration of antitoxin in genuine diphtheria. Even in severe streptococcic infections the diphtheria serum will not hamper the natural power of resistance, and while there is no doubt that streptococci may cause serious damage to the kidney, there is practically universal agreement that the serum will not add to the danger of nephritis.

As regards other treatment in addition to antitoxin injections there is some difference of opinion with the weight of authority in favor of not using local treatment especially if it tends to lessen the dependence on antitoxin as the main stay in the disease or if by mechanically modifying the appearance of the membrane it masks the progress of the case. As regards general supporting treatment there is no hesitation or disagreement. The resistive vitality must be kept up by means of strychnine or iron and the appetite must be encouraged in every way. Patients should be tempted at two hour intervals when not asleep, to take milk and other easily digestible foods. Plenty of liquid must be given, and this is frequently omitted because of difficulty in swallowing. Neglect of this, however, leaves the system with accumulating toxins when they might be washed out through the kidneys. For similar reasons the emunctories generally should be stimulated.

At the time of the convalescence, however, the use of local applications or sprays of hydrogen dioxide becomes almost imperative. Antitoxin neutralizes directly the toxins of diphtheria but it is not even in the slightest degree bactericidal. It has no effect upon Klebs-Löffler bacilli in the tissues or on the mucous membrane. These are usually thrown off during the reaction that follows the release from the burden of toxemia that has been clogging all normal action. Sometimes, however, the organism crippled by diphtheria is not able to do this promptly and there may be a renewal of the symptoms, or diphtheria bacilli may continue to live in the throat and be a source of danger to others for many weeks. It is in such cases especially where, because of laboratory diphtheria though there are no clinical symptoms and with regard to which boards of health very rightly refuse to raise the quarantine, the use of antiseptic sprays are especially valuable.

In general it may be said that under such proper care as has been here outlined, if applied promptly, diphtheria ceases to be the dread affliction that it used to be.

DR. OSLER ON IMMORTALITY.

THERE is a pleasure in store for all observers and thinkers in scientific ways, who have also emotions to be considered, in Dr. Osler's address on Science and Immortality, which was delivered at Harvard University, as one of the Ingersoll lectures, and which has since been published in the form of a small book.

It is interesting to know that physicians had been asked in vain to express themselves upon their belief in immortality, before this Harvard audience; interesting because the feeling is implied that the physician must speak the truth as he finds it, not as it behooves him to shape it to a creed, interesting that Dr. Osler himself and others of his colleagues did decline, feeling that Immortality was as far too great a subject for them to speak upon as was Life itself. That he finally consented was doubtless with the feeling that it might help others whose emotions and whose consciences were in conflict to realize that one might face the question frankly, in company with Plato, Job and Sir Thomas Browne, without any reference to the formal expressions of their own individual creeds.

The skill of Dr. Osler's treatment of this untreatable subject lies not in discussing whether science proves that there is or is not a life to come, but in showing how little science has to do with a question that lies wholly beyond its ken. The charm of the lecture lies in the frank, simple way with which he states fundamental truths that exist as such, despite the church's desire to build upon them hopes and beliefs in immortality; and despite the scoffers desire to break them into stones to hurl at believers.

The passionate longing of the human heart for "the touch of a vanished hand, and the sound of a voice that is still" is recognized, as well as the burning mystery of existence that at times forges a man into a mere link in an endless chain moving mechanically in its monotonous round, and again lights his torch on the mountain top, while he peers amid the shadows to see what lies beyond. That there may be something beyond this life the poets and the sages admit, nay, hope for, but Dr. Osler states very straightforwardly that "of the things that are unseen science knows nothing, and has at present no means of knowing anything." What weight may be given to arguments, hopes, longings based upon emotions of the heart he does not try to say. But he does say that "To keep his mind sweet the modern scientific man should be saturated with the Bible and Plato, with Homer, Shakespeare and Milton. To see life through their eyes may enable him to strike a balance between the rational and emotional, which is the most serious difficulty of the intellectual life."

"WITH THE HELP OF A TOOTH-BRUSH."

England is nothing if she is not conservative, and her colonies, as a rule, surpass her in out-Heroding Herod in her insular dogmas. This is as true in regard to her medical absorption and inhibition as it is in all else, with the exception perhaps, of her powers of expansion in regard to the acquisition of new territory, but for once she has succeeded in being more thoroughly British than even Canada itself.

It seems that the municipal authorities of Folkstone, Kent, England, have the support and management of an institution for indigent children of both sexes under their jurisdiction, and that the Mayor of the town is directly responsible not only for the distribution of the funds used, but is also the arbiter in the Council as to what is necessary for the welfare of its inmates. At a recent meeting of the Board, after action had been taken on the necessary expenditure of the pounds, shillings and pence of the appropriation for the construction of a new dormitory for the children and the proper equipment and furnishing thereof, a timid member, who must have had a drop of alien blood in his composition, haltingly suggested that a small unexpended balance should be devoted to the formation of a fund for the purchase of tooth-brushes, and moved that their daily use should be made obligatory on all the beneficiaries of the institution.

Then the Mayor of Folkstone arose in his wrath and delivered a speech that for patriotic warmth and fervor of expression and thorough and hearty appreciation of the blessing of having remained an Englishman, will live long in the memories of his auditors as a direct refutation to the belief that public speaking is one of the lost arts in the British Isles. What peculiar grudge this worthy man bore against the harmless and inoffensive tooth-brush it is hard to say; judging from his impassioned words it could hardly have been a personal one, as in all probability he had never rubbed against one or been brought in contact with it in any way. Rather it seems, he regarded it as only one of the factors that as he says "have led to the degeneracy of the nation, and which have increased the effeminacy of the race, robbing it of its virile force and rendering it weak and puerile." Britons, he gravely assured us, as many others already have, "never can be slaves," but the step he declares is a short one, that "will lead the United Kingdom to the fate that befell imperial Rome in the zenith of her effulgent power, if her offspring yield to the soft blandishments of the tooth-brush and persist in the enervating habit of forcibly removing the soil of Old England that "clings deeply and darkly" to the finger nails of her future bulwarks. Better the senility of poor old Uncle Ned, with the consequent necessity of letting the hoe-cake be, than the death of all moral perception and the premature decay of racial rectitude. Evidently to this moral magistrate the ounce of "stopping" is not worth the £ of cure, and early manhood sans teeth does not outweigh, in his thoroughly insular scales, the prospect of advanced old age, sans everything.

Luckily for us, who are not only the direct descendants of this stolid stock, but are proud of it, the lump seems to have been leavened by the yeast of the struggle for existence in the early colonial days. This in continuous years by the weeding out of the survival of the fittest, has increased until the pendulum has swung a little to the other side and the massive and ponderous British John Bull has, by the process of evolution, blossomed out into the alert and quick-witted American "Johnnie on the Spot." This is apparent not only in the professions, but also in all business operations, and there is not a trade or trades-union in the country that is not quick to take advantage of any possible opportunity to advertise their wares, particularly when they can add it as a rider to a bill that is connected with public hygiene or sanitary improvement.

Thus, the action of the convention of the United Master Bakers' Union, recently held in St. Louis, in doing away with the labels which have hitherto been pasted on the loaves of bread, was a master stroke from the standpoint of diplomacy. For while we have been taught that man shall not live on bread alone, yet it does, in one form or another, enter so largely into the diet of us all that it has fairly earned its sobriquet "of the staff of life," and is about as much of a necessity to the masses as the air that they breathe or the water which they drink. Bread, moreover, unlike whiskey, varies very little in quality, and while some loaves may be a trifle larger than other loaves, there is, as a rule, no such thing as bad bread on the market. For there is a certain standard that all bakers must live up to in these strenuous days of competition in order to exist as the time has passed when the union laborer will ask for bread and accept

a stone in return. To him the entity of the manufacturing baker is nothing, for unlike the Englishman with his hat, he does not care to "see his maker's name," and provided only that the bread is fresh and the loaf is of full size, he is content. He is not buying trade labels of red, white and blue, and as he does not intend to cast his bread upon the waters, with an ultimate prospect of again finding it, he is utterly indifferent to any scheme of chromatic embellishment or pictorial ornamentation.

Judging from a sanitary view point, the whole matter is largely one of sentiment. The labels are affixed while the dough is still fresh, and as the adhesive matter is a flour paste, there is little difference between the two when the process of baking is complete. There has been, to be sure, some handling in both cases, but fire is by no means an inert purifier and there is little or no danger of infection from their use, even if the labels were eaten with the bread, which is not the case. In fact, the risk is not to be compared with that of the deadly shine on the prize apple at the corner fruit stand, or to that refused by the refractory child who emphatically declared that "company or no company, she would not have her face washed with spit." So that taking one consideration with another Patter-cake, Patter-cake baker man seems to have scored a point. For it will be a simple matter to have the names stamped out in the bread pans, while they have achieved a reputation in the community for purity of purpose that is synonymous with that of their own baking powder, and second only to that of the "pure young man" in the opera of "Patience."

The only wonder is that they have succeeded in getting there *first*, before some provincial board of health had made the mosquito-cleared welkin ring with the echoes of this "label-ous" iniquity. But reform, unlike charity, does not begin at home, and the story of the mote and the beam is not only biblical, but proverbial.

ECHOES AND NEWS.

NEW YORK.

Big Class for Bellevue.—Seventeen candidates for entrance to the University and Bellevue Hospital Medical School have been turned away for want of accommodation. The total enrolment of this institution is now three hundred and sixty.

Gift to Nassau Hospital.—Mr. George Arents, father of George Arents, Jr., who was injured by the overturning of his machine during the Vanderbilt Cup race on October 8, has presented $1,000 to the Nassau Hospital, where the younger Arents was taken after the mishap.

Award to Dr. Knopf.—The Superior Jury of Awards of the St. Louis Purchase Exposition has just awarded Dr. S. A. Knopf, of this city, a gold medal for his works on the prevention and treatment of tuberculosis, which were exhibited in the Section of Hygiene and Social Science.

Dr. Lambert Dean at P. and S.—The Deanship of the College of Physicians and Surgeons of Columbia University, held by Dr. John G. Curtis as Acting Dean since the resignation of Dr. McLane in June, 1903, has been filled by the election, for the statutory term, of Dr. Samuel W. Lambert, Professor of Applied Therapeutics. Dr. Lambert is the son of the late Dr. Edward W. Lambert, and graduated from Yale with the degree of A.B. in 1880, and with that of Ph.B. in 1882. He graduated from the College of Physicians and Surgeons of Columbia University in 1885. Since 1896 he has been one of the visiting physicians at the New York Hospital. Dr. Lambert becomes ex officio a member of the Columbia University Council, of the Board of Trustees of the Roosevelt Hospital, and of the Boards of Managers of the Sloane Maternity Hospital and of the Vanderbilt Clinic.

New York Eye and Ear Infirmary.—The Directors of the New York Eye and Ear Infirmary, at their recent annual meeting, listened with the greatest satisfaction to the report of the Treasurer, John L. Riker, showing that the institution had been saved from practical suspension through the generous donations of charitable persons. At the beginning of the fiscal year the infirmary found itself with a deficit of $22,000. It was determined to keep the running expenses of the infirmary within its income, preserving intact the endowment acquired by gifts and legacies as perpetual funds. This necessitated the closing of the Platt Pavilion for Contagious Diseases on March 1, and later the number of cataract ward beds was reduced from fourteen to ten. This meant that within the year sixty-eight persons suffering from a disability that could have been removed were turned away. When the institution found itself with a big deficit circular letters were sent and personal appeals made to friends for contributions, with the result that the debt was wiped away and a balance acquired. A careful estimate of all available sources of revenue shows that, with the amount of charitable work which the infirmary is called upon to perform, even with the present limitations, more than the balance now at hand will be required for the coming year. The money which the institution annually needs above current receipts varies from $10,000 to $20,000. The demands of the work grew yearly, calling for increased accommodations, which have been provided for by gifts for building purposes, but the endowment for carrying on the expenses of the enlarged plant has not grown proportionally. The nose and throat department was given up for this reason two years ago. If the financial condition of the infirmary will warrant it this will be reopened.

The officers chosen for this year are: President, James J. Higginson; First Vice-President, J. Harsen Rhoades; Second Vice-President, W. Emlen Roosevelt; Treasurer, John L. Riker; Secretary, Dr. W. E. Lambert. Among the plans for raising funds for the infirmary is one for an exhibition of the best works of 100 American artists and 100 European artists at the American Fine Arts Galleries, beginning in the middle of November and lasting until the middle of December.

Pneumonia Inquiry Begins.—A systematic attempt to solve one of the most important sanitary problems

in the world was begun last week, when the Pneumonia Commission met in the offices of the Board of Health to consider means of preventing the spread of pulmonary diseases. The commission is composed of Drs. Edward G. Janeway, Emmett Holt, Hermann Biggs and Health Commissioner Darlington of this city; Drs. William Osler and W. H. Welch, of Baltimore; Dr. Theobald Smith, of Harvard, and Drs. John H. Musser, of Philadelphia; T. Mitchell Prudden, of the College of Physicians and Surgeons, and Frank Billings, of Chicago. At the request of Dr. Darlington the city appropriated $10,000 several months ago for the investigation, and it is expected that the deliberations of the commission will extend for at least a year. The object of this commission was thus set forth by Dr. Darlington in his address to the meeting: "For some years the problem presented by the large and constantly increasing death rate from the acute respiratory diseases has been the cause of serious anxiety to the Board of Health. This problem has long been recognized as one of the first sanitary importance, and efforts have frequently been made to find some method for its solution. Succinctly stated, the situation is this: During the last twenty years the general death rate in New York City has fallen 25 per cent. and the death rate from all the principal causes of deaths have fallen from 10 to 40 per cent., excepting in four groups of diseases, in which there has been an increase. These are: (1) the acute respiratory diseases, (2) cancer, (3) the diseases of the heart. (4) disease of the kidneys. The increases in these groups have been from 10 to 25 or 40 per cent.; in the acute respiratory diseases being about 15 per cent. In the present year there has been an extraordinary increase in the first half, the deaths from the acute respiratory diseases forming no less than 23 per cent. of the total death rate, or 18,000, of which 8,630 were from pneumonia. There can now be no question that the exciting cause in each one of the diseases of this group is a micro-organism, which requires such conditions for its growth and multiplication as are found in the living body. These organisms, practically, do not multiply at all outside of the tissues or cavities of the body under natural conditions. The infection, therefore, must practically always be the result of communication, directly or indirectly, from one human being to another. The conclusion, then, seems justifiable that these diseases are essentially communicable, and however great the inherent difficulties of the problem may be, theoretically at least, they should be to a greater or less extent preventable." The subjects discussed by the commission yesterday afternoon and evening were frequency and variation of occurrence, evidence of communicability, mouth infection, seasonal relations, collection of statistics and geographical relations. Dr. Janeway was chosen chairman of the commission, which was subdivided into a clinical committee and a bacteriological committee. The former is composed of Drs. Janeway, Osler, Musser, Billings and Holt, the latter of Drs. Welch, Prudden and Smith. Dr. Biggs will serve on both committees.

PHILADELPHIA.

Warning Against "Walk in" Signs.—A physician of this city was recently robbed of an oil painting valued at $100 by a woman who came in shortly before the close of his office hours. He now warns the profession against the use of the "Walk in without ringing" sign, which is used by so many physicians during office hours. It is apt to invite thieves as well as prospective patients.

Nurses Will Soon Return.—Dr. Anita Newcomb McGee and the corps of nine nurses who have been in Japan during the past six months, are soon to return after rendering valuable service in the various army posts of Manchuria. They were to leave Nagasaki on October 23. The Associate Society of the Red Cross of Philadelphia, under whose auspices they were sent, is planning receptions for them in San Francisco and Philadelphia.

Miners' Hospital Enlarged.—The new building of the State Hospital for Injured Persons of the Anthracite Coal Region was formally opened at Ashland, October 19. The new structure is a wing of the main building, and is one of the finest in finish and equipment of the hospitals in the State. Dr. L. Webster Fox, of Philadelphia, was the guest of honor at the dedication.

Married by 'Phone in Smallpox Ward.—The first marriage by telephone in the city of Philadelphia was performed on October 18 by Magistrate Macleary. The persons to be married were in the smallpox ward of the Municipal Hospital, where the man had been taken some days before. He was seriously ill with the disease, and his fiancee insisted upon the ceremony being performed. Enlisting the aid of influential persons she obtained permission, and the details were arranged. The magistrate asked his questions on the 'phone and the answers of the parties in the hospital were witnessed by the superintendent, physicians and nurses. The man died seven hours after the ceremony.

Births of Males Increase.—Exact figures are not at present available, but it is known there has been an increase in male births in the city during the past months. A force of clerks is now at work on the vital statistics, and the exact gain will be known in the near future. The increase is stated to be ten per cent. during the past ten months.

Officers of Pathological Society.—The Pathological Society of Philadelphia, at the annual election held on October 13, elected the following officers: President, Dr. Alfred Stengel; Vice-President, Drs. Joseph McFarland, W. M. L. Coplin, Allen J. Smith and M. P. Ravenel; Secretary, Dr. D. J. McCarthy; Treasurer, Dr. T. S. Westcott; Recorder, Dr. D. L. Edsall. The President, Secretary, Treasurer and the majority of the Vice-Presidents were re-elections.

Copper Versus Typhoid.—Dr. George T. Moore, chief of the laboratory of Plant Physiology in the United States Department of Agriculture, addressed the Philosophical Society of Philadelphia October 21, on the subject of copper as a bactericidal agent in the purification of water. He elaborated points previously mentioned in our notes as to the efficacy of copper sulphate and colloidal copper in destroying algae and typhoid and cholera bacilli. Efficiency, harmlessness and economy are the three considerations in the purification of water, and copper meets all these requirements. Letters stating the efficiency of the process were read and authorities quoted as to the non-poisonous qualities of the solution employed. As to the cost, it was stated that reservoirs holding 80,000,000 gallons had been treated for algae at a cost of $50. Some of the members of the Philadelphia health department are of the opinion that the city should, in view of the successful laboratory experiments recently carried out, allow the use of one of the reservoirs to test the process on a large scale.

Notable Victory for Pure Food.—Charles W. Spencer, one of the firm trading as the Kansas City Beef Company, has been convicted of selling meat on which a preservative was used. The trial was a notable one,

as being a test case regarding the use of sodium sulphite, and also because of the eminent witnesses engaged. A preservative company, said to be in New York, which supplied Spencer the material employed under guarantee of harmlessness, was backing the defendant in the suit. The preservative, known as Three X preservaline, was acknowledged to contain 88 per cent. sodium sulphite, 10 per cent. of boracic acid, and 2 per cent. of sodium bicarbonate. The chief witness for the defendant was Dr. Oscar Liebreich, of the University of Berlin, who was brought from St. Louis for the purpose. Dr. Liebreich admitted that he was at odds with the German Government regarding the harmlessness of certain food preservatives, but asserted his belief that some of their laws will soon be repealed. When asked if he considered good for Americans what his government had forbidden for Germans, he said German laws were political as well as health laws. It is reported he was paid $4,000 for his testimony. The jury returned a verdict for the Commonwealth.

CHICAGO.

Must be Examined Before Appointed.—Chicago surgeons and physicians who have practiced for thirty years, and whose names are known to medical men from New York to California, hereafter will have to pass the same examination as the most callow graduate of the smallest medical school in the country before they can be placed on the staff of attending physicians at the Cook County Hospital, according to the measure adopted October 21 by the County Board. Under the terms of a resolution presented by President Foreman, the Board voted to place all attending physicians and surgeons under civil service rules, as well as to reduce the staff to 65. The staff at present numbers 113.

Political Pull Doomed.—Political pull is doomed at the hospital as a result of the Board's action, which is declared to be one of the most important taken for years in relation to introduction of civil service at a county institution, and one of the reasons for the new arrangement is the enormous pressure being constantly brought to bear on the County Commissioners by those who want appointments. The lessening of the size of the staff and the making of the positions permanent will work great good to the hospital, it is thought by Mr. Foreman. Responsibilities will be better divided, and it will generally be found of the first importance to the welfare of the patient.

Ghoul Plot in Hospitals.—It is said that certain hospital authorities of this city were recently charged with catering to favorite undertakers in the matter of disposing of the bodies of persons who die in the institutions. The impression was given that the hospitals are receiving a commission from undertakers. While no direct charge was made, the insinuations were unmistakable. These accusations were made by Dr. Behm, vital statistician of the Health Department, and by a delegation of undertakers headed by former Alderman Sloan, to the Council Health Committee. So thoroughly convinced were the Aldermen of the truth of the accusations that an ordinance intended to stop the unjust practice was recommended to the Council for adoption.

Arrest of N. News Wood.—Reviving the sensational charges made by Dr. John B. Murphy against the Christian Hospital in his injunction suit last year, Dr. N. News Wood, President of the Hospital, was attached October 19 for contempt of court, and was given until October 25 to show cause why he should not be punished. Dr. Wood was arrested on complaint of Dr. Murphy, and was at once taken before Judge Holdom. He was finally released on $1,000 bonds, signed by his wife. The injunction which Dr. Wood is accused of violating restrained him from using the name, signature or picture of Dr. Murphy in any way in connection with the hospital, or from representing in any way that Dr. Murphy has or ever has had any connection whatever with the establishment. In his bill Dr. Murphy charged he had never heard of the Christian Hospital, and denounced the use of his name as fraudulent. It is now charged that Dr. Wood has been selling membership certificates with the picture of Dr. Murphy upon them, and is still using Dr. Murphy's name in his business, notwithstanding the order of the court.

State Asked to take Insane.—A movement has been started by the County Board to seek legislation transferring the Dunning Hospital for the Insane from County to State management. The plan, which originated with President Foreman, provides for a division of the institution. It is proposed to transform Dunning entirely into a State Insane Asylum, and establish the Home for the Poor and the Hospital for Consumptives on some large tract of land farther from the city. The Board unanimously approved the proposition and referred it to the Committee on State Legislation. They will petition the State Board of Public Charities to recommend to the General Assembly at the approaching session the enactment of the necessary legislation for the transfer.

Division of Fees.—The following decoy letter, signed by "J. C. Evans, M.D., Odell, Illinois," was sent to one hundred Chicago surgeons and physicians, asking whether or not they would pay the writer a commission for referring a patient to them:

"MY DEAR DOCTOR.—I have a case under my charge which requires attention along your line of work. I am not quite sure of my diagnosis, but will leave that whole matter to you. The people have heard of you favorably, and are inclined to go to you for treatment. As they are wealthy they ought to pay a good fee for the service. Now, doctor, you understand that I am a young man just starting a practice, and in small towns we cannot make any distinction between the rich and poor in the matter of charges. I have only received my regular visiting fee in this case. I understand, however, that it is customary for physicians to pay a commission of 25 per cent. upon all referred work, and I will deem it a favor if you can take care of me in this matter. Kindly let me hear from you by return mail, as I am anxious to bring the case to you at once if satisfactory arrangements can be made. Yours truly."

The result of these letters was 18 acceptances, 26 declinations, and 56 failed to answer. The decoy letter was published in the *Chicago Daily Tribune*, October 17, with the substance of the letters of the gentlemen who made acceptances, publishing their names. It is believed that one or two local physicians instigated this matter, and then turned it over to the *Chicago Daily Tribune*. The profession in general is very much incensed at this underhand method of exposure, and no doubt the matter will be thoroughly aired at a subsequent meeting of the Chicago Medical Society or its Council.

Death for Insane and Incurable.—At the National Prison Congress, held at Quincy, Illinois, October 19, according to the press dispatches, Dr. Henry G. Hatch, of Quincy, advocated homicide or the right to let a person take his own life when he is found to be incurable; and also he would have the State dispose of the permanently insane and incurable by putting such persons to an easy death. He also favored sterilization to prevent the increase of the criminal class. He would

have the State prevent the marriage of undesirable persons, and would forbid the saloonkeeper selling liquor to the habitual drunkard. Several physicians have been interviewed regarding the view promulgated by Dr. Hatch, and have denounced it in vigorous terms.

Is Consumption Hereditary?—Dr. Charles L. Mix, in a popular lecture on this subject, denied Dr. Koch's theory of hereditary predisposition to tuberculosis. He cited statistics to show that the disease is merely a result of infection or exposure. Members of families in which consumption has appeared need not be haunted by a fear of the disease, provided they do not expose themselves to the tubercle bacillus; nor should members of families in which it has not appeared believe they are immune. The hereditary thory is based on the unscientific argument that since consumption appears in certain families and not in others it must be inherited. No satisfactory theory why consumption is more frequent between the ages of 20 and 30 has ever been advanced. Why do one-third of all stenographers die of consumption and only one-tenth of those engaged in outside work show hereditary predisposition? Why do bookkeepers show a death rate of nearly 28 per cent.? The reason that girls suffer more from consumption than boys is because they are at home taking care of the consumptive parents.

Deformities of the Nasal Septum.—Dr. Chas. M. Robertson read a paper on this subject before a recent meeting of the Chicago Laryngological and Climatological Society, in which he enunciated the following points: (1) The sawing off of a ledge or spur will often give more room than would appear possible at the pre-operative examination. (2) Great care in saving mucous membrane in these cases is not so important as is usually believed, as it is usually hypertrophied and, therefore, a diseased tissue. (3) The precaution of avoiding a perforation which he had seen less than a dozen times in his operative life. (4) The impracticability of "V"-shaped operations as made by files and knives on small deviations, the consequent packing into place till the septum has regained its rigidity. (5) The utter failure of all crushing operations as they are brutal and unsurgical, aside from being impractical, from the fact that it is impossible to make the circumference of an arc fit into a space the length of a segment of same. (6) The ease and success of the Gleason method in most cases where there is no external deformity. The advantages in the short time that packing is necessary. (7) The absence of firm cartilaginous support in the window resection operation, and the liability of one or more perforations occurring during operation or healing. (8) The importance of saving all tissue possible that has function and is not diseased. (9) The total disregard of so many surgeons to this class of nasal stenosis, and the great benefits accruing from such operations on special functions and the general health of the individual.

Invisible Droplets of Sputum Expelled in Talking.—Dr. Alice Hamilton read an interesting paper on this subject before the Chicago Medical Society, in which she embodied the results of experiments that were carried on in the Memorial Hospital of Infctious Diseases. Recent bacteriological investigations show the streptococcus invariably present in cases of scarlet fever, yet in many cases it is of low virulence. Scarlet fever may run its course without any streptococcus complications when streptococci are present in the tonsils. A member of the hospital staff contracted a severe rhinitis and pharyngitis when in attendance upon a case of scarlet fever. Another contracted streptococcal tonsillitis after his first visit to the ward, and organisms were found not only in the throat, but in the blood A third contracted streptococcal tonsillitis after having performed an autopsy on a case of scarlatinal sepsis. It is well known that nurses suffer from sore throat soon after going on duty. Last spring, to prove whether the streptococcus was actually disseminated in the air by scarlet fever patients, plates were held before the mouths of children, who coughed or cried, from half a minute to one minute, the expirations being forcible, and of fifty patients examined, the results were not uniform so far as the number of colonies was concerned. A good deal depends upon the dryness of the mouth, etc. The colonies on plates varied from one to 75, and the proportion of streptococci varied also. Of fifty patients, 47 were found by cultures made from swabs to have streptococci upon the tonsils; 33 expelled streptococi in coughing, crying, or breathing forcibly with the mouth open. In some the number of streptococcus colonies was less than one per cent.; in others it rose to over 50 per cent., there being an average of 20 per cent. Of 34 children who coughed or cried, 20 of them had streptococcus colonies. Of 16, who simply breathed heavily, 13 expelled streptococci. These cases represented all varieties of scarlet fever, and the observations and cultures were made during the first three weeks of the disease. After detailing further experiments and observations, Dr. Hamilton said, among other things, that surgeons and nurses may be the source of septic infection of patients even after the ordinary precautions have been taken. Surgical dressings prepared beforehand and indeed at the time of operation by nurses whose mouths were unprotected, and who must necessarily speak to each other occasionally, may be fraught with danger. There was undoubtedly more or less danger from the germ-laden sputum of the average surgeon who keeps his face close to the wound when describing the technic of an operation to the class.

The Management of Bright's Disease.—Dr. Alfred C. Croftan, in a paper with this title, read before the same Society, stated that the terms Bright's disease, nephritis and albuminuria are not infrequently used synonymously. It seems almost trite to correct this popular misconception by the statement that Bright's disease may be and often is the cause of nephritis; that nephritis may be due to Bright's disease, but may also be due to a great number of other causes. Finally, albuminuria is a common, though not a determining symptom of almost any form of nephritis. The expression "Bright's disease of the kidney" is, therefore, not so wrong as many are inclined to think, although the expression "the kidney of Bright's disease" would be more correct. The most modern views in regard to Bright's disease seem to be that his clinical entity is primarily a cardiovascular disorder of manifold origin The old postulate, and the one most commonly accepted even nowadays, was that the kidneys for some reason of other became primarily involved, and that as the result of this renal inadequacy certain excrementitious urinary bodies were retained in the blood and tissue juices, and there produced all the symptoms of Bright's disease, including the cardiovascular changes. Since we have learned to understand that in many instances the cardiovascular changes precede the nephritic changes; that many cases of Bright's disease progress to a fatal termination, with practically no involvement of the kidneys, or only very slight degrees of renal inadequacy, we have been forced to abandon this conception, at least for the overwhelming majority of cases. After considering the theoretical possibility that some poison or group of poisons may affect simultaneously the

heart, arteries and kidneys, the author stated that the other most important signs of Bright's disease are to be attributed to serious impairment of the kidneys, and are the inevitable result of any nephritis. He referred in particular to the edemas, to the retention of chlorides, and other well known signs of renal inadequacy. What the causes of this general intoxication, affecting chiefly the cardiovascular apparatus, may be, remains undetermined. He thinks there is very little doubt that in many instances chronic gastro-intestinal disorders can be incriminated, and that abnormal putrefactive processes in the bowel, or abnormal disassimilation of the food products, as a result of perversion of the gastro-intestinal function, can be made responsible. All prophylactic and causal treatment must be directed towards the correction of any gastro-intestinal perversion, or any hepatic insufficiency that may be present. Next, the chief point of attack must be the cardiovascular apparatus; and then, in advanced cases, with renal involvement, treatment may profitably be directed towards the kidneys themselves, and, lastly, as in any other disease, but particularly in so chronic a disorder as Bright's disease, much attention should be paid to the treatment of the patient, chiefly in he sense of keeping up his general nutrition, and enabling him to exercise his resisting powers to their full effect. The treatment of the gastro-intestinal disorders, in view of the protein character of the derangement, must needs vary in each individual case.

CANADA.

Personal.—Dr. Peter H. Bryce, chief medical officer for the Interior Department, Ottawa, has been in St. John, New Brunswick, where he has been selecting a site for a detention hospital, which the Federal Government will erect there at a cost of $30,000. It is expected that the hospital will be in operation by next season.

Typhoid Fever in Winnipeg.—A short time ago the city of Winnipeg appointed a medical commission to inquire into the cause of the prevalence of typhoid fever there. This committee has completed its work, and reports that in their opinion the prevalence of the disease can be laid almost wholly to unsanitary conditions prevailing in the city, which, coupled with house flies, of which Winnipeg can boast more than its proper quota, is held accountable for the epidemic under investigation.

Hospital Saturday in Vancouver.—Saturday, October 15, was "Hospital Saturday" in Vancouver, B. C. Collections were made which totaled $839.68, less than a year ago, when the sum amounted to $1,119.75.

New Wing for Hamilton, Ontario, Hospital.—The Governors of the General Hospital, Ontario, have decided to erect a new wing to the institution at a cost of $40,000. When erected the new building will accommodate 65 private patients, besides providing a modern operating room. It is likely that at the coming municipal elections a by-law will be submitted to the ratepayers for raising $50,000 for the purpose.

Graduation Exercises at the Toronto General Hospital.—The Toronto General Hospital Training School for Nurses held its annual graduating exercises on the evening of the 21st of October, when thirty-two nurses received their diplomas, eighteen of whom have already received appointments in other hospitals. The lady superintendent in presenting the twenty-third annual report stated that during the past year 625 applications for admission had been received. Forty-two of these were accepted on probation and twenty-seven were enrolled as nurses. At the present time there are four probationers in the hospital, 76 undergraduates and seven graduate nurses, making a total of 87, which constituted the nursing staff of the hospital. The total number of nurses who had received their diplomas in this school was now 407. Dr. Fred. LeM. Grasett delivered the address for the medical staff, Sir William Meredith presented the diplomas and Dr. Charles O'Reilly, the Superintendent, distributed the prizes.

Consumption of Spirits in Canada.—In Canada the consumption of spirits during the last fiscal year amounted to 5,343,954 gallons, or .958 gallons per head of population. This is the largest consumption on record since 1885. Then it reached 1.126 gallons per head. Last year the consumption of beer was 27,608,510 gallons, an average of 4.918 gallons per head of population. The use of beer has been steadily on the increase since 1869. The consumption last year was the largest on record, except the year 1902, when it reached 5,102 gallons per head. The average since 1869 was 3,182 gallons. The consumption of wines remain about the same, 0.96 gallons per head. The average quantity of tobacco used per head per year has been 2.178 pounds for thirty-five years. Last year it reached 2.765, the largest on record.

GENERAL.

American Journal of Urology.—The first number, October, 1904, of *The American Journal of Urology*, published by the Grafton Press, New York, and edited by Dr. Henry G. Spooner, of New York, has been received. Articles by Dr. Howard Kelly, of Baltimore; Dr. Winfield Ayres, of New York, and Dr. Ferdinand Cathelin, of Paris, all eminent in the field of genito-urinary diseases, constitute the leading features in this number, together with a liberal number of abstracts of interest to genito-urinary specialists. The fact that the American Urological Association and several other genito-urinary organizations have appointed this journal as their official organ, assures us that it will be a valuable addition to medical literature. The editorial board consists of the following well-known physicians: Arthur Bevan, M.D., of Chicago; Follen Cabot, M.D., of New York; A. E. Gallant, M.D., of New York; Orville Horwitz, M.D., of Philadelphia; Howard A. Kelly, M.D., of Baltimore; Gustav Kolischer, M.D., of Chicago; Robert T. Morris, M.D., of New York; William H. Porter, M.D., of New York; Robert Bruce Preble, M.D., of Chicago, and Hugh H. Young, M.D., of Baltimore. The magazine, in addition to its worth from a medical point of view, is handsomely gotten up, and taken altogether is a credit to both editors and publishers. There has long been a demand for an exclusive genito-urinary journal, and if the standard which characterizes the first number is continued *The American Journal of Urology* will be considered the leading organ in this field in America. The subscription price is $3 a year; $3.50 for foreign countries.

Mississippi Valley Medical Association.—The officers elected at the Thirtieth Annual Meeting of the Mississippi Valley Medical Association, held at Cincinnati, Ohio, October 11-13, are as follows: President, Bransford Lewis, M.D., St. Louis; First Vice-President, Frank Parsons Norbury, M.D., Jacksonville, Ill.; Second Vice-President, J. H. Carstens, M.D., Detroit, Mich.; Secretary, Henry Enos Tuley, M.D., Louisville, Ky.; Assistant Secretary, John F. Barnhill, M.D., Indianapolis, Ind.; Treasurer, S. C. Stanton, M.D., Chicago, Ill. Next place of meeting, Indianapolis, Ind., October, 1905.

OBITUARY.

Dr. Montefiore Levi Maduro, of New York, died in St. Luke's Hospital on Saturday as the result of internal injuries received six years ago in a bicycle accident in Central Park. Dr. Maduro was born at St. Thomas, Danish West Indies, and was educated at the College of Physicians and Surgeons, and in London, Paris, Vienna and Berlin. He was at one time on the house staff of Lebanon Hospital and visiting physician at Mt. Sinai Hospital. He was a member of the American and State Medical associations.

Dr. Oliver Soper, of Upper Montclair, N. J., was stricken with paralysis while at breakfast on Saturday after returning from an early professional visit. He died late in the afternoon. He was born in Lodi, Bergen County, N. J., sixty-one years ago. He studied medicine while he was a blacksmith. For thirty years he practiced in Lodi. He moved to Montclair in 1892.

Dr. Truman E. Parkman, a physician and surgeon who had practiced his profession in that vicinity for fifty years, died at his home in Rock City Falls, October 24, aged eighty-three years.

Dr. William C. Flowers, of Cambridge, Mass., died October 20, aged seventy-nine. He was formerly one of the best known physicians and surgeons in Cambridge. He was born in Halifax, N. S.

Dr. Samuel W. Woodhouse died suddenly in Philadelphia on October 23, aged eighty-three. He was one of the oldest graduates of the University of Pennsylvania. He was surgeon at Fort Delaware in 1854, at one time physician to the almshouse and penitentiary, and accompanied the Sitgreaves-Zuni expeditions to New Mexico and Central America.

Dr. George Purviance, Assistant Surgeon General of the United States Marine Hospital service, fell or jumped from a fourth story balcony of the Orthopedic Hospital in Philadelphia on October 19, and died a few minutes later. Dr. Purviance was suffering from a nervous trouble, and had been in the hospital since August. He was sixty-three years old. After practising for a time in Pittsburg he entered the Marine Hospital service in which he served more than thirty years.

Dr. Auguste Frederic Muller died in Germantown, Pa., October 20, aged sixty-four, after being ill for a long time with cancer of the stomach. Dr. Muller was chief of staff of the Germantown Hospital, and one of the most prominent physicians in that part of the city. He was born in Alsace-Lorraine, tought in the Civil War, and acquired a taste for the physician's calling while in the hospital recovering from a wound. Later he was made librarian at the Pennsylvania Hospital, and finally studied medicine.

CORRESPONDENCE.

OUR LONDON LETTER.

(From our Special Correspondent.)

London, October 15.

A FRENCH MEDICAL PILGRIMAGE TO LONDON—THE OPENING OF THE MEDICAL SCHOOLS—AN ANGLICAN CANON ON THE CLERICAL AND MEDICAL PROFESSIONS.

In the medical world of London the past week has been given up to the entertainment of a band of French medical pilgrims, numbering about 150, who, greatly daring, braved the terrors of the Channel and the horrors of our British fog in order to see something of what is being done on this little island for the cure of disease and the discovery of new truths likely to be beneficial to mankind. The visit, in spite of difficulties inevitably attending the organization of such things, went off very successfully. A liberal discount must, I suppose, be made from the glowing eloquence with which the Frenchmen expressed their admiration of all they saw in hospitals and laboratories, but as far as could be judged, they were genuinely pleased with their reception. Professor Poirier, who was one of the most prominent speakers at the various banquetings and other entertainments held in their honor, has confided to a French journalist that "this visit will be to us a profitable and imperishable memory. All we have seen in London is worthy of admiration—the cheerful aspect of the sick wards, which are adorned with flowers, and made gay by the flitting bright pictures of those graceful blonde nurses; the magnificent results of an individual initiative such as we have not made the most of in France. I leave England enchanted with my too brief visit." On the other hand our people were well satisfied with their guests. The idea of the pilgrimage originated with Dr. Sillonville, who, as usually happens in such circumstances, was less *en evidence* during the visit than any other of the band. In his student days he worked in England, and for the last ten years he has visited London every winter. He was struck by the comfort of the wards in the hospitals, by the great care taken of the patients, by the excellence of the nursing arrangements, and also by the skill displayed by the physicians and surgeons. But he was also struck by the absence of French medical students from the wards. This made him ponder over the question. Science is now the same in every civilized country. Discoveries made in Paris, London, or Berlin are immediately known the world over; but there were practical hints to be obtained by a personal visit that could never have been obtained otherwise. Several years ago he first suggested that French medical students should visit London, and he continually urged upon them the value of the experience they would obtain. There was at that time not much enthusiasm for the scheme. They thought there could not be much to learn, and "we do not know English" was a standing objection. He endeavored to meet this objection. Six years ago he organized classes for the teaching of English at the various hospitals, and evening classes were established for house physicians and surgeons. They met together and translated articles published in the *British Medical Journal*, and many medical textbooks, in order to obtain a good grasp of the technical terms. Then came the Entente Cordiale, and finally a very large number of the young men who had obtained a valuable knowledge of English accepted this proposal, and the present visit was the result. One hundred and fifty came, but there might have been three hundred. Asked what part of hospital work had struck the visitors most forcibly, Dr. Sillonville said that many things had impressed them, but perhaps none more so than the excellence of the nursing staffs. The nurses of the Paris hospitals are not so good, and the importance of this cannot be overestimated. A physician or surgeon can give directions for treatment, but he can be with a patient only for a few minutes of the twenty-four hours, and the rest of the time the patient is in the care of a nurse. Necessarily, then, for efficiency a capable staff of nurses is imperative. Dr. Sillonville sincerely hoped that the visit would be the commencement of much intercourse in the future between medical men of both countries to their mutual advantage. They had much to learn from each other, and they were all delighted at the prospect of a visit of British medical men to Paris. From many other sources it may be gathered that one of the things that most impressed our visitors was the English nurse.

They were struck by the high standard of the nursing staff at every hospital which they visited. All the nurses seemed to them to have the air of ladies; most of them were clever and many of them were beautiful. Then the wards struck them as brighter and cosier than those of the Paris hospitals. In fact, in some places they were inclined to think the comfort was rather overdone. From the scientific point of view one of the things that most interested them was the Pathological Laboratory of the London County Council Asylums, which is under the direction of Dr. Mott. Here the brains of deceased lunatics at the eight great asylums of the County of London are examined and classified. Dr. Mott exhibited the classified collection, and pointed out that the brain was as characteristic of the individual as the face. Among the brains was the smallest specimen of an adult human brain known to exist, and Dr. Mott pointed out that the brain of a chimpanzee was of a higher type than those of many lunatics. The brain was not unlike a large walnut—the skull corresponding to the shell, the dura mater, pia mater, and arachnoid membrane to the skin, and the brain substance itself to the nut. One important result of the work of the laboratory had been that dysentery, which for long had made fearful ravages in the asylums, was proved to be an infectious disorder; the segregation of the patients which resulted from this discovery produced a great saving of life. One great disadvantage from which this splendid laboratory suffers is its situation many miles out of London amidst the Essex marshes. Many of the visitors expressed surprise that so important an institution should be buried away in the country instead of being made accessible by being placed in the metropolis. This view has frequently been expressed before, but the County Councillors turn a deaf ear to all representations on the subject.

If it be true that blessed is he that hath his quiver full, it may be said that London rejoices in a perfect benediction as far as medical schools are concerned, for she has eleven. These were opened last week for the winter session with the usual blare of oratory. The homilies were for the most part of the usual character—variations on the eternal text "Be virtuous and you will be happy." In one or two of them, however, the speaker departed somewhat from the well-beaten track. Sir William Macewen, of Glasgow, who delivered the Huxley Lecture at the Charing Cross Hospital, spoke in defense of the appendix against which a war of extermination was now being waged in some quarters. "Some surgeons," he said, "have freely admitted that when making an incision in a patient for some other disease they frequently remove the little organ as a precaution against appendicitis." But is the appendix, he asked, entirely useless to man? Some contended that the small intestine could be done without, that the spleen was superfluous, and that the stomach itself could very well be dispensed with simply because some people had lived after these organs were removed. Sir William drew a fanciful picture of a future race in whom the whole digestive apparatus would be removed, and also would retain but a small incision, down which could be dropped concentrated tablets of nourishment. "All that would be necessary," he continued, "would be for a firm of chemists to enlarge its premises, and the tablets could be delivered every morning by the postman. No navy would be needed to protect our sources of food supply, and the domestic servant problem would be solved forever." Macewen holds that the appendix itself has an important function in assisting digestion. Moreover, it is the chief habitat of a certain micro-organism that is most useful in attacking imperfectly assimilated nourishment, and if only as a medium for the cultivation of these bacteria the appendix has its useful mission to perform and should be retained. The address may be regarded as a counterblast to Metchnikoff's suggestion that old age may be prevented by the removal of the large intestine.

At St. Mary's Hospital, Dr. A. E. Wright, who is chiefly known to fame as the inventor of a method of inoculation against typhoid fever, the value of which is now under consideration by a Special Committee appointed by the War Office, deplored the want of interest in research shown by his fellow countrymen. He said it was doubtful whether among the forty or more millions of the British race a hundred scientific workers were actively and continuously engaged upon the problems of disease. Here and there an isolated worker was to be found devoting to the work of medical research such free time as he might have at his disposal, but practically no organized effort was in existence. The cause was, according to Dr. Wright, easy to discover. It was a question of financial necessity. Not only was there nothing in the form of reward for successful solution of the problems of disease, but the worker who devoted himself to the task of solving this, the outstanding problem of civilization, immediately found himself face to face in his own person with problems of the primitive savages, those of finding subsistence, and clothing and shelter from the weather. His solution was the provision of salaries on the scale of those which obtained in civil or other Government services. A sufficient beginning would be made by the annual allotment of even so small a sum as was paid to the State in the form of death duties from the estate of a single millionaire. This would provide an average income of £500 for 100 workers, and would probably leave over a sufficient balance for the upkeep of the necessary laboratories.

The London School of Tropical Medicine is, of all our institutions, the one in which the intelligent visitor finds the most striking embodiment of the imperial idea. At the opening of the winter session the place swarmed with ex-Governors of Colonies, the proconsuls of the British Empire, and in the wards and laboratories are seen the men who are about to go forth to these distant lands as missionaries of health and civilization. Sir Patrick Manson, who spoke after the delivery of an inaugural address by Sir Charles Bruce, formerly Governor of Mauritius and several other colonies, also deplored the want of funds available for the furtherance of medical research. He said that it had come to be recognized that the great causes of disease in the tropics were not bacteria but protozoa and larger parasites. These, he pointed out, had never been adequately studied in England; the most important information on the subject had been gathered from France and Germany. There is not, said Manson, with sorrowful emphasis, a single man of English nationality who is a competent protozoologist or helminthologist. The Government has promised a grant of $2,500 a year for five years for the endowment of a worker on protozoology, and Manson appealed to the public for an equal sum to be devoted to the study of helminthology. Unfortunately the British public cares nothing either for worms, except as bait for fish, or for protozoa.

At the School of Medicine for Women, Miss Murdoch complained that the unthinking world has adjudged the whole body of medical women as frumps because a few have been careless of their personal attire.

As a fact, she said, many of the graduates dress well and look well. To this it may be replied that it is also a fact, painful though it be to admit it, that there are many women graduates and students who do neither. Short hair and general dowdiness are still the badge of a considerable proportion of their tribe. But it is pleasant to hear one of their leaders denounce frumpishness. Miss Murdoch made the general statement that most women wear too much. "Three layers," she said, "including the dress, seem to me all that is necessary, though I have counted as many as twelve."

At the annual dinner of the Norwich Medico-Chirurgical Society, Canon Jessopp, a cleric who has won considerable distinction in literature, confessed that when at the age of twenty-three years he had charge of a parish he had practised the art of healing by the light of Nature after a somewhat heroic fashion. He had given calomel in 12-grain doses, had cut blisters (*sic*) off an old woman's breasts, and had done all sorts of operations. He looked back with horror at these proceedings and was thankful that he had escaped trial for manslaughter. Perhaps it was owing to this experience that he had been saying for many years that the medical profession was the grandest in the world. To begin with, he said, the preparations for it were incomparably superior to those required for entering any other profession. When he considered the course through which every medical man had to pass before he was qualified to practise it filled him with admiration and also with a certain amount of shame and certainly of regret. He was afraid examinations through which the men of the clerical profession had to pass before they were qualified to teach and preach and exercise their functions were less severe than they used to be. While the medical profession had been going up the clerical had been going down. The estimation in which medical men were now held was immeasurably higher than it used to be when he was young. The Canon went on to say that the hope of civilization, of the happiness of the human race and of progress in all directions lay with the doctors who were pushing forward their discoveries every day. Sir Arthur Conan Doyle, M.D., the creator of Sherlock Holmes (the idea of which character he got from Joseph Bell, one of his old Edinburgh teachers), who was present, indulged in some amusing reminiscences of his short career as a medical practitioner. When he was in America he remembered an American being kind enough to take the chair at a little dinner at which he was present; and in proposing his health he said it was a sinister fact that although Conan Doyle was said to be a doctor, no living patient of his had yet been seen. Doyle went on to say that few medical men had seen so many sides of the profession as himself. In his short and checkered career he had served as a surgeon in a whaling ship; he had been in South Africa as an army doctor; he had practised in the country, and in the slums of a great city. He had even attained the dignity of a consulting room in Wimpole Street—one of the thoroughfares in this metropolis in which doctors most do congregate. This referred to the fact that he had tried consulting practice as an ophthalmic surgeon. Patients did not come, however, and he soon found his true sphere in literature. "One conviction," he proceeded, "has always remained with me, and that is that whatever line of life a man goes into, as long as he is to use his brain the medical training is absolutely the best training a man can undergo. There was a time when a young man who was going to do anything in the world was passed mechanically through the bar. I believe the time will come when the similar young man will be passed through medicine, because I know no other means by which he could get to the fundamental and absolute facts of life. The mere fact that in his training a man has to undergo so searching an ordeal in the most critical years of his life, and pays such enormous attention to detail, is in itself evidence that he receives a splendid training. I have always said that a man who has mastered Gray's Anatomy, to him life has no future terrors. If our young army officers had five years' study in the same sense that the young medical man has five years' study we should become the terror of Europe."

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifty-fourth Annual Meeting, held at Pittsburg, September 27, 28 and 29, 1904.

THIRD DAY—SEPTEMBER 29.—*Continued.*

(Continued from Page 763.)

Brief Remarks Regarding the Home Modification of Milk.—Dr. Theodore J. Elterich, of Allegheny, presented this paper, the object of which was to emphasize a few general truths regarding the home modification of cow's milk, without attempting to cover the work which has been done in this direction, not to criticize the various methods in use at the present time. According to the method used by the author, the percentages of the proteids and fat, very low at first, are gradually increased until they approximate the averages required at the end of the first year. The quantity for each feeding depends upon the age of the child, and the table recommended by Holt is usually followed. An accompanying weight-chart of a patient suffering from malnutrition is a fair indication of the results obtained in the majority of cases.

Observations on Food in Typhoid Fever.—Dr. James I. Johnston, of Pittsburg, said, that in the management of typhoid fever the attention should be directed primarily to the nursing, care of the patient, efficient hydrotheraphic measures and to proper feeding; secondarily, to the employment of drugs, usually for the relief of symptoms. He discussed the question of food about which there is diversity of opinion, and quoted the case of Dr. Stuart Patterson, of Pittsburg, in which the patient had no food for twenty-one days—water only being given. The course of the disease was very favorable and the loss of flesh and strength were no more marked than is usual. While not agreeing entirely with those who would give no food during the period when desire for it is absent, Dr. Johnston has restricted his patients at this time of the disease very greatly, and in a study of some fifty cases he thinks he has seen some advantage, at least in comfort to the patients, when compared with fifty other cases treated immediately preceding this group. In the class of cases in which limited feeding was employed during the period of anorexia the cases were less toxic, were no more emaciated than other cases, and made a quicker convalescence. There were but three cases of relapse, no perforations and few hemorrhages. All had flat abdomens, one only required treatment for tympanitis, and few any treatment for diarrhea other than stopping nourishment for a brief period.

The Influence of Milk Infection Upon the Course of Acute Infectious Disease in Adults.—Dr. David L. Edsall, of Philadelphia, reported a large series of cases of typhoid fever occurring in one hospital ward and under entirely similar conditions, excepting for a difference in the care of the milk in the two periods contrasted. When the service began a very large proportion of the cases had severe diarrhea and many had mild diarrhea, while abdominal symptoms that were frequently very distressing were strikingly common. The milk was suspected to be at fault, and bacteriological examinations showed extremely large numbers of bacteria. The milk was Pasteurized after this, and in the following three and a half months of the service, diarrhea was almost absent and abdominal symptoms were extremely slight and were uncommon in the group of cases as a whole, the milk evidently having produced the diarrhea and the severe abdominal symptoms in the earlier cases, and probably having been largely responsible for several deaths. The milk supply was subsequently changed and is now under careful regulation and it seems in all ways satisfactory. The great importance of determining definitely in both private and hospital practice that the milk comes from an approved source and is properly cared for was emphasized, as well as the fact that such conditions, while not common in such widespread epidemic form, are still undoubtedly common in individual cases; and a bad milk probably exercises not uncommonly a very evil influence upon the prognosis of acute infectious diseases. Milk infection of this kind is peculiar from a clinical standpoint, in that it is observed in patients already ill. The milk infection is very likely to be overlooked, because the symptoms may readily be attributed to the primary disease.

Dr. Adolph Koenig, of Pittburg, in the discussion said, he believed that physicians should be guided largely in their efforts to cure disease by paying attention to the natural instincts of their patients. He believed that it was an established physiological fact that there is no digestion of food possible when there is a temperature of 102° F., although he is not in a position to verify it. He has withheld food, absolutely everything, but a little whiskey for sixteen days, with the most happy results. As soon as the patient manifests desire for food, he believes that milk is the best diet and the best results are to be obtained by adding barley water.

Dr. Stengel, of Philadelphia, considered the doctrine of overfeeding a most pernicious one, and one in which he had seen the most disastrous consequences. While he could not bring himself to withhold food as Dr. Koenig suggested, during the period of anorexia, still he is convinced that in the first period of the disease, nine out of ten are overfed.

Section B.

Paraffin as a Surgical Medium.—Dr. M. Delmar Ritchie, of Pittsburg, recommended the use of cold solid paraffin of a melting point of 110° F. injected by means of a lever injector. He stated that the production of an embolus was impossible when cold, sterile paraffin was injected into the surgically cleansed tissue through the rounded needle point, and that there was no known danger to life in the correction of any deformity, however marked.

Dr. Stewart L. McCurdy, of Pittsburg, felt that the employment of cold paraffin would be a great advance over the old method of employing the heated article which had been followed in almost every instance by some complication, such as ulceration or hyperemia.

Dr. Dillinger referred to a case of total blindness caused by the paraffin getting into the central artery of the retina, which he felt was probably due to semisolid or hot paraffin being used, and that much of this objection would doubtless be removed by the method suggested by the author.

Dr. Shirls B. Jackson, of Pittsburg, stated that he also had seen a case of embolism of the retinal following the employment of this remedy, and believed it was better to leave the work to those who had considerable experience in it.

Clinical and Statistical Study of Convergent Strabismus.—Dr. Wendell Reber, of Philadelphia, gave a critical review of 36 private patients and 130 hospital cases, being classified according to sex, age of onset, determining influence, degree of deviation, amblyopia, increase in vision, variety of squint, and refraction. The treatment and the results obtained in each case were carefully outlined, those patients above the age of seven being contrasted with those below that age. In conclusion, he stated that he believed heredity played an important role, and urged the early treatment of all cases occurring before puberty with properly adjusted glasses.

Carbolic Acid and Ammonia Burns of the Eye.—Dr. Edward Stieren, of Pittsburg, called attention to the great dearth of information in ophthalmic literature on the action of ammonia on the tissues of the eye, and stated that eyes so affected almost invariably are rendered blind by dense opacity of the cornea. The essayist reports four cases of ammonia and three cases of carbolic acid burns of the eye, and remarking on the similarity for the first few days of the ocular reaction to these agents, and the great dissimilarity in the ultimate outcome, those burned by ammonia recovering with very poor vision or no vision at all, while the carbolic acid burned cornea clear up and in time recover their former transparency.

Mastoiditis.—Dr. Fremont W. Franhauser, of Reading, considered the condition with reference to the etiology, pathological changes, symptoms, diagnosis, prognosis and treatment. He urged careful examination in all suspected cases, with operation, being sure to make the opening large enough, if no improvement occurs within a short time, believing if the operation was not complicate, there was very little danger and that it was better to sacrifice some parts to early operation than to allow the grave conditions to continue, and thus run the chance of losing a valuable life.

Retarded Development of Speech in Young Children.—Dr. G. Hudson-Makuen, of Philadelphia, after explaining some of the frequent causes of faulty speech development, such as structural irregularities in the peripheral organs, obstructed nasal respiration and paretic conditions of the nerves supplying the tongue, palate and lips, dwelt particularly upon disturbances of hearing as a factor in the causation of the various forms of defective speech, and of the effects of faulty hearing and faulty speech upon mental development. He said, that if a child does not hear words spoken he will not understand them, and if he does not understand them he will not use them, and that the intellectual centers being deprived of the stimulus which comes from the use of spoken language will share in the retarded development, and the result will be a feeble minded as well as a deaf

child. The cause of the condition may be by no means difficult to determine and the diagnosis and prognosis are equally difficult, and thus it happens that children who have no organic defect of the brain, but who have failed to develop intellectually because they are hard of hearing and cannot talk, may find their way into institutions for imbeciles and idiots because of mistake in diagnosis. Partial deafness in young children or deafness for only a few sounds is sufficient to interfere with the normal development of speech, and the child failing to understand general conversation gradually stops listening, and the brain finally loses its power to comprehend the meaning of spoken language. Dr. Makuen suggested in addition to the usual and well-known methods for improving the peripheral auditory apparatus, a course of training for the development of the central perceptive faculties by regular systematic training and education. He said, that children are sometimes intellectually deaf and the treatment for these cases consists in the frequent repetition of words in more or less close approximation to the ears, after the manner first suggested by Urbantschitsch, of Vienna. An interesting case was reported, illustrating the various points in the paper, of a child who had been born deaf and dumb, and who had actually been taught to hear and speak by this treatment.

Suprarenal Gland in Surgical Shock.—Dr. Alex. R. Craig, of Columbia, described two cases. The first was a compound fracture of the elbow caused by a gunshot wound six hours before his admission to the hospital, at which time, he was pulseless, cold, cold sweat, pupils dilated and labored breathing. The injection of three pints of normal solution, in the first and third of which was one dram 1 to 1,000 solution of suprarenal extract was followed by a very favorable reaction. The second case was a compound fracture of the skull in the right parietal region, caused by being thrown from a freight train, in which case similar results were obtained.

Boils.—Dr. George W. Guthrie, of Wilkesbarre, said that boils are caused by infection of follicles of the skin by pyogenic bacteria; the same laws govern their growth and development, as in the cases of the most serious infective inflammation. There are several predisposing causes: coarse, unclean skin; large follicles; slight traumatism of the surface; anything that lowers the vitality; overwork, poor food, exhausting diseases, fever, albuminuria, diabetes. Under treatment, use whatever builds up the general system: proper hygiene, needed rest; also pay attention to the skin; as medicine, quinine possesses decided power in preventing pus formation. Abortive measures are of doubtful efficacy, and unwise meddling often causes much more harm than good.

Clinical Studies in Blood-Pressure and Shock in Traumatic Surgery.—Dr. Jonathan M. Wainwright, of Scranton, stated: (1) That there is one drug, morphine, of which the value is unquestionable. (2) The most effective treatment is the mechanical one, which suffices alone in many cases, and after it has been carefully applied, strychnine and digalin may possibly be of value. (3) Nitroglycerin, atropine and alcohol are inert or harmful, though alcohol is valuable in after condition. (4) Intravenous infusions are of real and great value. The efficiency of adrenal, in addition, is doubtful. The author also showed a series of charts illustrating the conditions of various patients.

Craniectomy in Microcephaly.—Dr. W. D. Teagarden, of Washington, recommended in the case of a child with a fairly nourished body and symptoms of cerebral irritation, the operation be performed as soon as possible after the minimum age, *i.e.*, nine months has been reached, believing the sooner the operation is performed the better, and that the mortality from shock will be small, if performed at that time, as compared with those cases in which it is done after emaciation has begun and the nervous system weakened by constant irritation of the nerve centers, reporting a case in which the early operation had seemed to be of great advantage.

Dr. Theodore Diller, of Pittsburg, felt that the theory upon which this remedy was based *i.e.*, that the sutures of the skull would not permit to expand and this prevented the development of the brain, was an erroneous one, and did not favor the operation.

Dr. T. H. Murdoch, of Hope, who for a number of years has had charge of the Western Pennsylvania Institution for Feebleminded Children, stated, that there were in that institution a number of children who had been operated upon without any apparent results, and believed that the supposed advantage accruing by opening the skull would be more than counterbalanced by the growth of cicitrical tissue.

Brain Tumor and Trauma.—Dr. Edmund W. Holmes, of Philadelphia, stated, that the pathology of these growths is not different from those in other parts of the body, and that with the exception of cysts, sarcoma and gumma are the most frequent. The upright posture renders the cranium more liable to injury, and in severe cases the diffusion of the force increases the dangers to the brain. The direct influence of the blow is how by the tumor appearing at the seat of the injury, the most vulnerable parts of the brain being, therefore, the most subject to tumor, although by reason of concussion and contre-coup deeper parts may be affected. The fact that the brain is so well protected from without against infaction, so long as its outworks, the scalp, the skull and the meninges are intact, militates against the bacterial origin of tumor and favors the belief in the cellular, nutritional and formative elements as causes of the growth.

Acute Gastric Dilation.—Dr. Theodore B. Appel, of Lancaster, reported three cases of this condition; the first being that of a male seventeen years of age, who had sustained a fracture of the left femur by a bank caving in on him; the second case was that of a woman, forty-two years of age, and followed four days after an operation for fixation of the left kidney; the third was that of a male, twenty years of age, neurotic, and with a marked history of catarrhal gastritis, who after about a week's illness following indiscretion in diet, associated with alternate diarrhea and constipation, abdominal pain, subnormal temperature and rapid pulse, followed about an hour afterward by a rectal hemorrhage of a quart of blood, which was succeeded by vomiting. The first two cases terminated fatally, and the last recovered. Absolute rest to the stomach, relief of distention of the stomach, rectal feeding and strychnine hypodermatically were recommended.

The Cause of Death in Operated Cases of Intestinal Perforation Occurring in Typhoid Fever.—Dr. J. Hartley Anderson, of Pittsburg, reported twenty-one laparotomies, one being for typhoid appendicitis with peritonitis; another of peritonitis from infection of the mesenteric lymph gland; and another to obstruction due to a mass of round worms in

the ileum. He described, in detail, the operation, and stated as the primary causes of death following, 1, shock; 2, toxemia of peritonitis; 3, devitalization of the body by fever. He contrasted the value of local and general anesthesia, and called particular attention to the danger from toxemia from the contents of the paralyzed bowel.

Cæsarean Section.—Dr. G. W. Wagoner, of Johnstown, reports history of a Slavish woman, aged thirty-four years, who when admitted to the hospital, after being several hours in labor and unsuccessful attempts to deliver her, presented the following condition: all parts normal; os fully dilated, child presenting transversely with the right shoulder impacted in the superior straight, and the right arms prolapsed, pains frequent and excessively strong. After repeated unsuccessful attempts at version under complete anesthesia, rupture of the uterus seeming imminent, Cæsarean section was performed, following which the patient progressed favorably and was out of bed on the twenty-sixth day.

Congenital Elongation of the Left Lobe of the Liver.—Dr. Levi J. Hammond, of Philadelphia, reported the case of a woman, thirty years of age, who had suffered for eight years with pain, pulling and pressure in the epigastrium, worse when lying down on the back. At operation, the left lobe of the liver was found to be extended entirely across the lesser curvature into the left hypochodrium, which was flattened out at the extremity over the spleen. This elongated lobe was sutured to the abdominal wall, and this was followed by an uninterrupted recovery.

On the Advantages of Performing Capital Operations in Certain Cases Without Anesthesia.—Dr. J. J. Buchanan, of Pittsburg, gave the following indications for the performance of operations without anesthesia: (1) Profound septic infection; (2) severe collapse from loss of blood and shock; (3) fecal vomiting with liability to drowning during operation of aspiration pneumonia subsequently; (4) collapse or compression of lung with liability to respiratory failure; (5) obstruction of esophagus; (6) advanced kidney disease with liability to anuria; (7) ease of performance with minimum of pain. He gave an extensive list of operations he had performed in the presence of these indications, without anesthesia, including laparotomies for appendicitis, intestinal obstruction, visceral exploration, colostomy and intraperitoneal abscesses; amputations of thigh, leg, arm and forearm; ligature of arteries for aneurism; craniectomy for depressed fracture of the skull; wiring fractures patella by open incision; operations on chest wall, trachea, perineum, prostate and bladder; herniotomy for strangulation; operations for radical cure of hernia and intestinal resection. He emphasized the comparatively slight pain usually produced by even formidable operations and the great tolerance and cooperation of the patients, even children, foreigners and delirious patients. He stated that the surgeon should always have sufficient reason for withholding the anesthetic and should always secure the cooperation of the patient if he be of a reasoning age. No restraint is necessary or should be employed. Promise of anesthetic should be given if pain should be beyond endurance. Fulfilment of such promise is rarely required.

Professional Responsibility in Accident Cases Involving Litigation.—Dr. John B. Roberts, of Philadelphia, stated that the experience of the public had caused a justifiable distrust of surgeons employed by corporations as well as of experts paid by patients endeavoring to recover damages. Medical men could do more than other citizens to dispel this doubt as to the reliability of professional testimony. The duty of the medical attendants employed by the party sued, and that of the doctor of the patient injured are identical. The duty of each is to obtain promptly a return of health and a just settlement of the claim. Many unjust verdicts against railroads and other corporations are due to the patient becoming neurasthenic or hysterical because of the unwise, ignorant or dishonest suggestions of attending physicians, lawyers and friends. Immediate and careful examination, accurate record of the patient's statements and the symptoms at the time of injury, the avoidance of injurious suggestions with prompt institution of scientific treatment, and an early settlement of damages will diminish litigation and hasten the recovery of the patient. The doctor should make several examinations. He should remember that disease may exist before injury; that disease may follow injury, and yet, not be due to it; that the patient may be mistaken, and not dishonest, and that hysteria and neurasthenia are common conditions, existing sometimes with organic lesions without being connected with these lesions. Dr. Roberts believed that corporations liable to be sued would save money by always employing experienced practitioners to examine the injured patient early, in company with the medical attendant, and by insisting upon at least two such examinations. Delay in settlement, too many examinations, unwise suggestions of friends and numerous conferences with lawyers are often productive of traumatic neuroses, and have unjustly drawn thousands of dollars from corporation treasuries.

BRITISH MEDICAL ASSOCIATION.

Seventy-second Annual Meeting, held at Oxford, England, July 26, 27, 28 and 29, 1904.

SECTION ON TROPICAL MEDICINE.—*Continued.*

(Continued from Page 768.)

The Anti-Malaria Experiment at Mian Mir.—Ronald Ross, Professor of Tropical Medicine, University of Liverpool, said that the anti-malaria experiments at Mian Mir has been described in three reports, namely, one by Stephens and Christophers, one by James, and one by Christophers alone. The first, apparently written early in 1902, deals merely with some preliminary thoughts and observations, and he therefore did not propose to examine it here, beyond remarking that it clearly defines the object of the experiment which was then about to commence. That object was "to demonstrate by test operations" the "utility of all anti-malarial measures," particularly the destruction of *Anopheles* larvæ. The actual operations and their results are detailed in the subsequent reports of James and Christophers; and with regard to those, he made the following criticism: (1) The profession is not convinced that mosquito propagation at Mian Mir was really suppressed to the extent claimed, even over the small radius of half a mile; (2) the test employed for detecting reduction in the number of mosquitoes consisted of nothing but the formation of a personal impression unsupported by definite figures, and was therefore neither delicate enough nor convincing enough for the purposes of a formal and important experiment like this one; (3) the figures given regarding variations in the amount of malaria are not sufficient to enable one to form any

opinion one way or another; (4) several of the statements contained in the reports appear either to be contradictory or unintelligible, or to involve mechanical impossibilities; (5) even if we admit the thoroughness of the work done and the validity of the tests used, the whole experiment is still open to the final criticism (*a*) that it might not have been continued long enough, and (*b*) that the radius of operations might not have been large enough. He therefore thinks that the sweeping conclusions placed at the end of Lieutenant Christophers' report are not supported by the evidence which he and Captain James have published. They are not entitled to claim any more than is contained in the following sentence: "That after operations extending to a half-mile radius, lasting a year and a half, and (apparently) costing between two and three hundred pounds, no very large reduction in the number of mosquitoes or in the amount of malaria was, judging wholly by their own personal impressions, effected." Owing to the omission of a financial statement for 1903, one can only estimate the cost given above. The considerable sum spent on bricking the watercourse is not included, as it seems to have been more or less useless; probably a few pounds' worth of oil would have done as well. In these remarks he has confined himself to a textual commentary and has not dealt with the broad principles which govern the prophylaxis of malaria, and which, though self-evident enough, require a more or less mathematical treatment for their formal demonstration. The logical basis of the great measure of mosquito reduction is absolute. There is no doubt whatever that in any locality one can reduce mosquitoes to any percentage one pleases, provided their propagation is arrested to a sufficient degree and within a sufficient radius. This proposition, like the multiplication table, does not require experimental proof, and is incapable of disproof. If experiments would appear to disprove it, the experiments and not the proposition must be wrong.

Experiment is required, not in support of the general principle, but only in order to obtain certain unknown constants. One still has to determine (*a*) the radius of operations required to reduce the density of a given species of mosquito to a given percentage; and (*b*) the percentage of mosquito reduction required in order to obtain ultimately a given percentage of malaria reduction. But experiments directed to this end must be of a true scientific quality; they must be prefaced by a mathematical inquiry and be executed by means of rigid tests applied by the brain as well as by the hand. In the meantime, one may rest assured that the smallest work against malaria will not be without its reward. The oiling or drainage of a single pool, the cinchonization of a single person, and the "proofing" of a single room must and will perform their small quota of good. If more than this can be done, let it be done; better results will follow. But if local authorities wish to clear the malaria in a large town or cantonment they must be prepared to spend money on the work, just as they would for a new water supply or sewerage system. The example of Ismailia is always before them. The road leads straight forward. Work like this at Mian Mir only tends to arrest enthusiasm in the cause without really adding anything definite to our knowledge.

The Results of the Campaign Against Malaria in Mian Mir.—Captain E. P. Sewell made this report in which he said that the results were not satisfactory. The causes of failure he had summarized as follows: We can only conclude that the campaign has up to the present proved a failure, and the cause of this failure is not far to seek. The operations were doubtless efforts in the right direction, but were conducted on a scale utterly inadequate to make any impression on an evil of such a magnitude as that against which they were directed. At the outset, it was a mistake to attempt to treat the R. A. lines as an isolated area. They cannot be treated as such, and any factor which affects the rest of the station is bound to affect a part of it, which is not separated by any physical division, but is in direct continuity and subject to the same influences.

Secondly, any plan which aims at the reduction of malaria in Mian Mir must have as its basis the entire abolition of the irrigation systems, and the clearing off of all watered crops in the cantonment, and around it for the distance of at least one mile.

Thirdly, although the operations included the filling up of certain pits and holes and the draining off of water from low-lying patches of ground, a few minutes' acquaintance with Mian Mir after a heavy shower of rain would convince any one of the utter inadequacy of such local measures in one corner of the cantonment. There was nothing to prevent the *Anopheles* breeding in any of the numerous pits and ditches outside the area, and flying a few hundred yards to the buildings within the area.

To meet with any success a campaign against malaria must be on a very much larger scale. Nothing short of the complete leveling and draining of the whole cantonment and its environments, and the total abolition of irrigation and irrigation channels in and around the station is at all likely to cause any appreciable difference in the amount of malaria in Mian Mir.

Unfortunately these drastic measures involve considerable expense. The stoppage of irrigation would entail great loss to the zemindars, and the compensation paid to them for the deterioration of their land and loss of crops would amount to a large sum of money, which local funds are quite unable to meet, and which the Government of India have hitherto shown no disposition to grant.

Prophylaxis Among Troops.—Andrew Duncan proposed to limit his remarks to the prevention of malaria amongst the troops in military expeditions, and more particularly to the mobile columns of the same. The preponderating effect in disablement that malaria causes in campaigns has even been manifest. It will suffice to mention as examples the Ashanti expedition of 1896, in which one-half of the troops employed were placed *hors de combat* by African remittent fever; the Spanish-American war, in which out of 13,657 men in hospitals at Cuba 2,014 were causes of malaria; whilst in our Burmese, China, Abyssinian, Looshai, Duffla, Malay, and Afghan wars, amongst others, malarial fevers either headed the list of admissions or took the second place. What, then, are the means whereby we may prevent this large disabling influence?

Before proceeding to the more especial means of prevention in accordance with the true etiology of malaria, he first drew attention to the avoidance of the predisposing elements in matters connected with: (1) The selection of the men. (2) The age of the men. (3) Race. (4) The season for operations. (5) The clothing. (6) The period of marching. (7) The campaign grounds. (8) The food. (9) The precautions at night.

Selection of Men.—First in the selection of men. Here it must be borne in mind that previous attacks of malaria render the subjects of them more prone to future attacks. Hence the medical histories of a regiment must be closely scrutinized. For example, in the Duffla expedition of 1874, the Sixteenth M.I. had for the eleven months previous to the outbreak of hostilities suffered greatly from "fever" in Assam: the

Forty-fourth L.I. had for seven months before the expedition been stationed in the malarious plains also of Assam; in the campaign the Sixteenth M.I. had 29.06 per cent. admissions for malarial fevers, the Forty-fourth Assam L.I. 18.40 per cent. for the same cause, rates far above those of the other regiments not presenting the malarious history which had admissions ranging from 3.60 per cent. to 7.35 per cent. only. Again, in the Afghan war my old regiment, the Fourteenth Sikhs, one of the finest regiments in the Bengal Army, suffered greatly from malaria; previous to the campaign they had been for three years stationed in the malaria-stricken Peshawur Valley. But not only does a malarious history predispose to malarial disease, but it also powerfully influences the onset of other diseases, especially amongst native soldiers—for example, pneumonia—it is also one of the common causes of cardiac dilatation. A regiment with a clean malarial history presents a great contrast to those cited above. I was some time in charge of the Twenty-third Pioneers, in the Afghan campaign. They had come down from the hills of Simla in rude health, and no regiment during the war gave a better medical history. Hence one learns that regiments that have suffered markedly from malaria previously should not be chosen. The severer and more fatal forms of malaria never, as a rule, attack those previously immune from it.

Age.—Regarding age, it has been found that young soldiers and recent recruits suffer more than their older comrades. This was well shown in the Ashanti expedition of 1895-6.

Race.—Respecting race, it has been found that the negro race possesses the greatest immunity; in the War of the Secession in America, negro troops suffered the least from malaria, while a like experience was obtained in the Mexican war.

Season.—As regards season, meteorological influences speak with no uncertain voice. The end of the hot season in the tropics, when great alternations between the morning and evening temperatures occur, is very predisposing to malaria; again, the most dangerous time in the United Provinces in India is at the drying up of the rains. Hence this period of the year should be avoided if possible for military expeditions. A striking example of the above facts was shown in Ashanti in 1873. Here previous to the arrival of Sir Garnet Wolseley certain military operations had been carried on in the unhealthy season of the year. The Marines became so stricken with malaria that they had to be sent home, the mortality of the strength disembarked being 17.30 per cent. Sir Garnet operated in the succeeding healthy season, and the mortality for the strength was only 3.14 per cent.

Clothing—Respecting clothing, flannel should be worn. Khaki cotton drill is not a good material to wear. At my recommendation in Afghanistan the men of the regiment were given a woolen jersey each, and the admision for malaria at once decreased. Cotton drills become damp and clammy in a humid climate. In the Perak expedition, for instance, it was a great source of fever. Flannel protects against the great alternations of heat and cold, of the day and night temperatures, inasmuch as by it a more equable temperature is insured.

Marching Periods.—As regards the period of the day for marching, some authorities, such as Morache and Sanderson, advise not to march in the early morning. The late Professor Parker recommended doing so in the afternoon in hot malarious climates. He would, however, differ from this teaching on account of the danger of sunstroke. He never observed any ill effects from marching in the early hours in Afghanistan, while the men were far more knocked up whenever they did march in the afternoon. In Ashanti also it was found that although malaria was most powerful in the early morning, yet less harm occurred when marching in these hours than when proceeding for a length of time in the sun. The men should always have a meal of coffee and bread previous to setting out, and should also smoke in moderation, as Sanderson found by experience the good effect of tobacco in warding off attacks of malaria when marching in the early morning. At the end of the march, sitting down in wet clothes should not be permitted, and arrangements should be made whereby the men always have their great-coats handy. In the Afghan war the Fourteenth Sikhs were without their great-coats, and for nearly three weeks slept on the ground with only their ordinary uniform. Malarial fever was exceedingly prevalent amongst them. The cholera belt should always be worn.

Camps.—As regards the camping grounds, the exigencies of the military operations must of course always be of chief weight. But as showing the influence of healthy camps over the reverse, it may be mentioned that during the Zulu war the second division enjoyed a high state of health, being encamped and operating on high bracing uplands. The first division, on the contrary, was on the hot swampy coast line, and suffered much from fever. The American War of the Secession gave us a striking example of this in the force occupying the Atlantic coast: where there were huge alluvial tracts the intermittent fever-rate was 194.03 per 1,000, as against 121.77 for the Pacific region, where only a narrow strip of land intervened between the sea and the mountains. Again, especial precautions should be undertaken where the necessities of warfare entail much disturbance of the soil, as in making fortified places. This was shown in the large amount of malarial fever that attacked the men in the Zulu war during the erection of Fort Chelmsford. In the French army, again, at Madagascar, the men employed in road-making died like flies.

Food.—Turning now to the food of the men, the ration must be sufficient, and it should not be a monotonous one. Livingstone in Africa found plenty of wholesome food protected his men more than quinine. Tea and coffee should be as far as possible habitually drunk, both on the march and in camp. Koch recommends that all water be boiled in the prevention of malaria. In the Niger campaign the only white officer who remained free from the disease boiled his water. The late Sir Henry Stanley used to emphasize the importance of sterilizing water in combating malaria. In the Terai the Forest Department, by constructing deep masonry wells, have enabled their employés to remain permanently at work at the station at which they had formerly to be relieved periodically every fortnight on account of the deadly malaria.

Sleeping Places.—With regard to the precautions to be taken at night: where arrangements can be made, the men should not sleep on the ground. In the Spanish-American war it was reported that "nearly all those who slept on the ground after the battle of July 1 to 3 contracted some form of malarial fever, the worst cases being in those who had to sleep on wet ground with only their army blankets for bedding. Every one of a number of men who slept on wet ground at a certain spot near 'Bloody Bend' died later of pernicious malaria." Mr. Sanderson, whose life was spent in the jungles of Chittagong after elephants, attributes the fact that he was remarkably free from malaria to two facts: (1) that he always slept off the ground on a bedstead, and (2) that he always slept within mos-

quito nets. This last fact brings us to the methods by which we may attack the *fons et origio mali*. Malarial fever may be prevented in three ways: (1) by malarial protection against the infected mosquitoes; (2) by destruction of the infected mosquitoes; (3) by prophylactic drugs.

Mechanical Protection.—With regard first to mechanical protection: any one who has been on a campaign must recognize the fact that for an army on the march, protection by mosquito nets is out of the question. What chance would there be for the net remaining intact during the daily packing and unpacking of the impedimenta. Again, in these days, when one's luggage is cut down to a minimum, so that a tent and portable bedstead are even out of the question, how could a mosquito net be fixed up? The officers of the force might, perhaps, arrange for such, but does any one imagine that Tommy Atkins would take care of his net? The destruction of infected mosquitoes is also out of the question on the line of march. There remains, therefore, the protection to be obtained by the administration of prophylactic drugs. There is a vast amount of evidence from all parts of the world in favor of this method. There is also a certain amount of evidence showing this method to have failed. Thus it is curious that both in the Ashanti war of 1873 and in the last one, the principal medical officers did not find the practice of any value. The same occurred in the Malay war of 1875-6. In the Gambia expediton the men taking quinine had as much fever as those not taking it. But, on the other hand, there is overwhelming testimony in its favor. Time will not permit me to give all the instances in which it can be found to be beneficial to give prophylactics. What prophylactic should be used? During the latter period of his service in India he made comparative trials of fifteen different antimalarial drugs. The experiments were comparabe, as they were all made on one race of men, namely, Goorkhas, and the men were all in the same station. The result showed that quinine was *the* drug *par excellence*. Next to quinine, powdered pine bark was most successful. Narcotine, recommended by the late Sir William Roberts, was disappointing. Arsenic he found to have no antimalarial action. It has, however, been found effectual by other observers such as Crudeli and Ricchi in Italy, Downie in India, and Leslie in Africa. Sulphur and hyposulphite of soda, recommended by Dr. Schmidt, were tried in the Mauritius epidemic of 1866-7, but found to be of no use.

(To be Continued.)

AMERICAN PEDIATRIC SOCIETY.

Sixteenth Annual Meeting at Detroit, Mich., May 30 and 31, and June 1.

(Continued from Page 814.)

Lobar Pneumonia Occurring in 118 Cases in Infancy.—These cases were presented by Dr. J. L. Morse, of Boston. It was his opinion that lobar pneumonia occurs more frequently in infants than is commonly supposed to be the case. In analyzing his cases he had observed that the onset was not as violent as one would generally suppose, usually beginning with fever and a cough, often with vomiting, but not frequently with a convulsion. The patient was often apathetic and drowsy. He had found that the left lower lobe was the one most often involved, next in frequency being the right upper and right lower lobes, and the entire lobe was more often involved than a part. The involved area was usually larger in the fatal cases than in those who recovered, but the part involved seemed to be about the same. 12.8 days was the average duration of fever in the cases that were uncomplicated, but had a fatal outcome; eight days was about the average of those cases who recovered. The highest temperature ranged from 103° to 106° F. Crisis was more common in the second year of life than in the first, and the temperature fell by crisis in more than half the cases. Remissions and irregularities of temperature occurred very often, but pseudocrisis was very uncommon, as was also collapse during the crisis. No patient died whose respirations were lower than 55, but the usual rate was between 55 and 80, and even when above 55 the respiratory rate seemed to have no effect upon the mortality. The rate of pulse varied from 150 to 170. In nearly one-fifth of the cases there was complicating otitis media, and empyema was a complication in about eight per cent. of the cases. The age of the patient and the amount of lung involved greatly influenced the prognosis, as the mortality was almost twice as great in the first year of life than in the second. If the temperature did not rise above 103° F., the pulse above 140 or the respiration over 55, the prognosis was good, but above these limitations it became grave, and the amount of increase seemed to have little influence on the chances of a fatal outcome.

Dr. F. S. Churchill, of Chicago, told of the case of a bay of two months who was attacked by pneumonia, the culture showing the pneumococcus and the smear the influenza bacillus. Although the infant survived the first attack, another, six weeks later, terminated fatally, but the second time the culture did not show any influenza bacilli. As the combination of these two infections is usually fatal in adult cases it was remarkable that an infant should have survived in the first instance. It was Dr. Churchill's belief that lobar pneumonia is much more common in infants than is ordinarily supposed to be the case, and that its presence is often overlooked by careless examiners.

Dr. L. E. Holt, of New York, had found the left lobe only affected in a series of 16 cases, and it was his experience that, providing the infant had been in good physical condition up to the time of the onset of the disease, the prognosis was good, if but one lobe were involved, and the pulse, temperature and respiration did not matter so much.

Dr. S. S. Adams thought the mortality rate mentioned was too high, as his private experience had been that death occurred only in about ten per cent. of cases. He advised baths only in the most extreme cases.

Dr. W. P. Northrup declared that in a few years fresh wholesome air and plenty of it would be used as a stimulant and antipyretic.

Dr. Morse stated, in closing, that he had especially wished to emphasize the fact that lobar pneumonia in infants was far more common than was ordinarily supposed, and to call attention to the fact that the rapidity of the pulse rate and respiration were not always dangerous indications.

Infant Acute Pyelitis.—Dr. R. G. Freeman, of New York, said that the acute pyelitis of infancy was sufficiently rare to pass unnoticed for a number of weeks, because the profession generally was unfamiliar with its manifestations, no account of the absence of local symptoms indicating the location of the disease. Female children appeared to be the most frequent victims, and infection from the genito-

urinary tract seemed likely, although the fact that many cases come on after intestinal disturbances, and the frequent association of the bacilli coli communis, would lead one to suspect infection from the alimentary tract. No evidence that the pelvis of the kidney was the location of the difficulty is given by the clinical manifestations. There are usually abnormal movements of the bowels, high temperature with marked remissions, sometimes accompanied by chills. Because it is a rather difficult matter to secure satisfactory urinal specimens from babies, he believed that this diagnostic method was too often neglected. Treatment was easy and harmless, consisting of neutralization of the urine. He reported the case of a male infant who gave some evidences of urethral irritation at the commencement of the attack, which had been preceded for several weeks by mild digestive disturbance. The attack lasted for three weeks, the temperature being irregular and very high toward the last, associated with nervous symptoms. Treatment was instituted on the twenty-second day of the attack, and the child made a complete recovery in eight days, remaining perfectly healthy.

Dr. J. L. Morse said he had no trouble in obtaining specimens of babies' urine for examination. In the hospital in Boston where he had gone on service the examination of the babies' urine was made a routine practice, and there were almost always some cases of acute pyelitis among the infants under treatment there, from which circumstance he judged that the frequency with which we meet this condition depends largely upon how often the urine is examined. If pus were found it was sometimes hard to tell whether it came from the kidneys or the bladder; if he saw spindle and caudate cells he referred the trouble to the kidney, if squamous cells were present it was probably in the bladder. It was, of course, a new field of investigation, but in his opinion nearly all cases were due to a colon bacillus. He had twice found tubercle bacilli in the urine, although tuberculosis was present in the kidney, and nowhere else.

Dr. Isaac A. Abt, of Chicago, reported a case of acute pyelitis where the Shiga bacillus was discovered in the urine. This would also open up a new field of investigation, as to whether this bacillus could be found in the urine.

Acute Myocardial Insufficiency in Certain Diseases of Children.—Dr. F. Forchheimer, of Cincinnati, said that a large number of acute myocardial insufficiencies developed in connection with the infections of childhood, and setting aside the possible fatal termination, there was the consideration of the lasting effects upon those children who survived. There were cases where such damage was done to the heart, as to permanently impair its function, although this condition might not be discovered until some extraordinary call was made upon it. The involvement of the myocardium was a fact now accepted by all in every case of pericarditis or encarditis, from which it could be seen how very likely acute myocardial insufficiency was to develop. The first symptoms to be noted was usually a diminution in heart force and arrhythemia, next dilatation, first of the left heart, then of the right, with insufficiency of their respective valves. Noticeable increase in the size of the liver follows the serious affection of the right heart. The author had seen cases where the liver descended to the level of the umbilicus. Weakness, tachycardia or bradycardia, irregularity of heart and pulse impulse, a broadening of the heart dulness and bruits, most commonly over the mitral and the tricuspid areas and the apex, but sometimes also over the base he regarded as the most usual symptoms. Among the acute affections he thought diphtheria most liable to cause myocardial insufficiency, generally making its appearance about the second or third week. Heart death in diphtheria is not always caused by pure myocarditis, at least two other processes may complicate it. The diphtheria toxin may affect the vasomotor centers resulting in dilation of the blood vessels, and retarding the proper propulsion of the blood, or, as it has been perfectly established that in diphtheria the vagus is often affected, this affection of the vagus may give rise to arrhythmia. Second to diphtheria, the author had experienced the septicemia of influenza, as a frequent cause of myocardial insufficiency. He had observed some cardiac changes in all the cases which had come to his attention.

Absolute rest was the first principle in the treatment of uncomplicated myocardial insufficiency. Predisposing causes must be controlled, and convalescence should be under most careful observation. If laxatives are needed those of violent action should be avoided, but strychnine and the digitalis group of drugs might be used depending on the amount of myocardium affected, while stimulants might also be indicated. In his own experience he had been able to reduce the pulse rate of one child from 140 to 60 by means of ice bags upon the abdomen to stimulate the splanchnic reflex, and saline transfusions in the beginning, to keep up the heart's contractions, with hypodermic injections of adrenal extract repeated every two hours. Except in the case of angina attacks nitroglycerin should never be employed. After the most acute symptoms had passed it was the author's custom to administer sodium salicylate and caffeine, alternating every two hours with the adrenal extract which was thus gradually withdrawn.

Dr. Jacobi stated that it was only since Engelman, of Boston, had shown the importance of the heart muscle aside from the influence of the nervous system that the necessity of studying the myocardium and its diseases had been generally recognized by physicians. It was now an acknowledged fact that a myocarditis, an endocarditis and a pericarditis might all three exist at once. Sometimes one comes in contact with an old cicatricial condition, but there are two forms of the condition, real interstitial inflammation and a parenchymatous degeneration manifesting itself under varying forms. He advised strongly against the use of digitalis as causing contraction not only of the heart, but of the arteries as well. He usually relied in such cases upon opiates such as codeine, and also made use of the iodides, and the application of ice bags.

Dr. Forchheimer stated in closing that his object had been to advocate some definite form of treatment in both chronic and acute myocarditis, and that he had endeavored to present two clinical pictures, one where myocardial insufficiency was due to a simple myocarditis and the other where it occurred as a complication.

THIRD DAY.—WEDNESDAY, JUNE 1.

Forty-Three Cases of Asthma in Infants and Children.—The analysis of 43 cases of asthma occurring in children under twelve was presented by Dr. L.

E. La Fetra, of New York. Divided according to the age of occurrence, eleven patients were under one year old, eight between one and two years, nine from two to five years, and fifteen from five to twelve years of age. The histories given were not sufficiently reliable to be of use for statistical purposes, but family history of asthma, rheumatism, tuberculosis or nervous affections was obtained in most instances. There were no Italians, and only two negroes among the patients studied, which the author regarded as peculiar, as one would naturally suppose that rickets would be an important predisposing factor, as is usual in the case of bronchitis and spasmodic croup. Rickets had been present in only eight cases, according to the history given. Two of the children had been born prematurely, 20 had had bronchitis, seven bronchopneumonia; one had had chorea, and there were two cases each of atelectasis and enlarged thymus gland. In fourteen cases bronchitis had been the cause of the attack, in two it was after pneumonia, and other cases were the result of a fall, an attack of malaria, a drive in a cold wind a gastric indigestion, etc. The periods covered by the attacks varied from "every winter" or "every summer" to those of daily occurrence. There were not three cases which were distinctly worse in summer, and in only two were the attacks more severe by day. There was emphysema associated with the asthma in ten cases, five of whom had the square or barrel chest. Nearly fifty per cent. of all the patients had adenoid growths, which the author regarded as significant. In 20 cases adenoids were associated with enlarged tonsils and one had a congenitally high arched palate without adenoids. There are few difficulties in making a diagnosis of asthma, if it is borne in mind that children are subject to it. The speedy recovery with recurrences, and the increased number of eosinophiles shown by a differential count would easily confirm it. He considered a differential count of leucocytes to be also of value. The peculiar type of breathing was induced by a narrowing of the lumen of the bronchial tubes, but there were two theories in regard to the cause of this, namely spasm of the smooth muscle fibers of the smaller and medium sized bronchial tubes, and vasomotor tumefaction or paresis, a sort of angioneurotic edema of uticaria of the bronchial mucous membrane. The proper treatment could usually be inaugurated after a careful study of the history and influences surrounding the patient. Such conditions as nasopharyngitis, bronchitis or adenoids should be considered as predisposing factors and receive careful attention. All predisposing or exciting causes should be recognized and removed. Diet and hygiene were important considerations as the general condition should be toned up as much as possible, and such measures as cold sponge bathing, open air exercise, and abundant ventilation day and night were very effective. Regarding medication, in cases of long standing or for the subacute he favored iodide of potassium. Steam impregnated with creosote he had found very useful for inhalation in the case of infants, when the attack closely resembled capillary bronchitis. If the child could swallow he gave ipecac and tartar emetic, together with nitroglycerin. He had also had success in the administration of atropine until the face flushed. If there were evidences of gastric indigestion syrup of ipecac might be used to empty the stomach, which should be done without delay. In older children he had successfully used the old mixture containing morphine sulphate, belladonna and compound spirit of ether. If the attack is due to vasomotor paresis, in accordance with this theory vasoconstrictors might be given. He had found suprarenal preparation very useful in certain instances.

Central, Peripheral and Obtrusive Dyspnea.—Dr. W. P. Northrup, of New York, mentioned three types of dyspnea; first, that of peripheral origin, neuritis, probably diphtheric and paralysis of the diaphragm; second, that of central origin, infectious transverse myelitis and paralysis of the thoracic muscles of respiration, and lastly the obstructive type, due to accidental pressure of the air in the thorax, perhaps on account of faulty exploration by the needle, not resulting from obstruction of the larynx or nasopharynx.

Dr. C. G. Jennings spoke of a very interesting case reported by him at the Boston meeting. The clinical picture was at first that of attacks of coma, but this soon changed and asthma set in. The case was one of autointoxication.

Dr. Holt was of the opinion that the only reliable remedy for asthma in a child was a change of climate. He recommended improving the general condition of such children by the use of tonics as cod-liver oil and iron, and keeping them in the open air as much as possible. Attacks of asthma were very apt to follow whooping-cough or measles.

Dr. Abt spoke of the dangers of unskilful aspiration of the chest, and Dr. Caillé said he had seen pneumothorax occur twice as the result of such explorations.

Acute Leucemia.—This was the title of a paper presented by Dr. F. S. Churchill, of Chicago. He stated that nothing could be regarded as a cause predisposing to this affection except possibly tonsilitis, and this might as well be an effect as a cause. The disease was not peculiar to children, and it ran the same course with them as with adults. Its duration was sometimes as brief as four or five days, or on the other hand it might last five months. There was invariably enlargement of the spleen, although it was not uncommon to see this organ diminish in size just before death. The blood examination was the chief point of interest. The hemoglobin and the number of erythrocytes were diminished, and the number of leucocytes ran from 6,000 to 810,000. Approaching death was denoted by a falling white count. There was a marked decrease in the number of polymorphonuclears, and almost no myelocytes. The blood tended to turn to the fatal type, but only one case in 29 presented a hemorrhage. The differential count offered the only means of making an accurate diagnosis in leucemia. A fall in leucocytes was almost always the effect of an intercurrent disease. The true nature of leucemia is unknown and all treatment was unavailing. Believing that the disease was malignant in nature some had tried the spray, but with no good result, but bacterial examination failed to give any ground for this view. He regarded any treatment as justifiable in such an obscure and fatal disease, however, and thought that serum injections seemed to offer the most hopeful indications. As twenty-nine cases had been reported he regarded it as more common than is generally supposed.

Primary Sarcoma of the Liver.—A case of adenosarcoma of the liver in an infant was reported by Dr. L. Emmett Holt of New York. The child was

poorly nourished, and on the right side of the abdomen a large tumor was palpable, filling the entire half and extending beyond the unbilicus and down into the pelvis. The tumor was smooth-surfaced, soft and distinctly outlined. Further examination was negative. There was a temperature varying between 100° F. and 102° F. A puncture of the liver was made under the supposition that an abscess might be present, and a bloody fluid withdrawn, with liver cells and fatty droplets, but no pus was obtained. The surgeon called in made an incision under cocaine anesthesia, and came upon a mass of broken down material, into which a drainage tube was inserted. The child died of exhaustion two weeks later and at autopsy the liver was found to be 19 cm. long and 21 cm. wide, weighing 735 grams. No peritonitis or thickening was noticeable. Adenoma with sarcomatous degeneration in the center was revealed under the microscope. No metatases were found, but a bronchopneumonia and a pericarditis were discovered. Only two other cases in children have been so far reported.

Radiograph of a Thoraco-Abdominophagus.—This was presented by Dr. Samuel S. Adams, of Washington, the monster having come under the observation of Dr. H. B. Sheffeld.

Election of Officers.—The following officers were elected for the ensuing year: President, Dr. Charles G. Jennings, Detroit; First Vice-President, Dr. Charles G. Kerley, New York; Second Vice-President, Dr. J. Park West, Bellaire, Ohio; Secretary, Dr. Samuel S. Adams, Washington; Treasurer, Dr. J. Park West, Bellaire, Ohio; Recorder and Auditor, Dr. L. E. La Fetra, New York.

NEW YORK STATE MEDICAL ASSOCIATION.

Twenty-first Annual Meeting, held at the Academy of Medicine, New York City, October 17, 18, 19 and 20, 1904.

THIRD DAY—WEDNESDAY, OCTOBER 19.

(Continued from Page 805.)

Twenty-five Cases of Pernicious Anemia.—Dr. Albert E. Woehnert, of Buffalo, read a paper in which he described the findings of 25 cases of pernicious anemia investigated under the care of Dr. Charles G. Stockton, of Buffalo. With regard to the microscopical findings, the blood of pernicious anemics looks much paler in color and in bad cases resembles roily water. There is a granular look as it flows, which reminds one of sand and water somewhat, and it would seem as though one were looking at individual corpuscles whose appearance is emphasized by their rarity. The viscosity of the blood is reduced and it flows more readily once it appears on the surface, while as there is a decrease of fibrin, its coagulation is delayed. The specific gravity of the blood is reduced. The hemoglobin is never reduced as much as the red cells and this sometimes gives a curiously deceitful red appearance to the blood. The most characteristic appearance is the increased size of the red cells. Poikilocytosis is noticed. Nucleated red cells occur very often and there may be curious granular appearances in the nuclear as well as the white cells. Sometimes the granules are so uniformly spherical in appearance as to resemble cocci. Sometimes they occur even in chains resembling streptococci and giving rise to the suspicion of actual microbic invasion. The tendency to take stains in various ways and so to give a varicolored picture is a very common characteristic of the blood of pernicious anemia.

Leucocytes in Pernicious Anemia.—Ordinarily the leucocytes are reduced in number. Whenever there are comparatively more white cells than red cells present, there must always be the suspicion that it is secondary anemia and not primary pernicious anemia from which the patient is suffering. In one of Dr. Woehnert's cases there was a distinct leucocytosis, however, shortly before the beginning of an intermission of the disease. As a rule, a reduction of the number of white cells is bad prognosis, while an increase in the number of leucocytes usually indicates that a period of improvement is at hand. Many of the white cells have atypical karyokinetic figures and at times two nuclei are found.

Etiology of Pernicious Anemia.—The more the picture of pernicious anemia is studied, the more is the physician forced to the conclusion that the disease is of toxic origin. There are many evidences of hemolysis. This blood destruction goes so far that the blood-making organs are not capable of meeting the demand for red blood cells, though many evidences are found in them of abnormal activity, and they endeavor to fulfil the unusual strain put upon them. The lemon-colored tint of the skin which is so characteristic of pernicious anemia and which occurs in all the cases, is due to the deposit of a certain amount of iron in the cutaneous tissues consequent upon the destruction of red blood cells and the consequent setting free of hemoglobin. There are many evidences in the internal organs of an accumulation of iron from the same cause. Whatever changes have been noted in the spleen and bone marrow, especially in the latter, are evidently secondary in character. It seems not improbable that before long the hemolytic agent, which is at work, will be discovered. Until then, the therapeutics of the disease are sure to be unsatisfactory.

Frequency of Pernicious Anemia.—Dr. James J. Walsh, of New York, said that undoubtedly many of the supposed rarer diseases occur much more frequently than was at first thought. Graves's disease, for instance, is by no means so rare as was considered to be the case twenty-five years ago. For a time statistics in this country seemed to show that diabetes was only half as frequent here as in Europe. The more careful gathering of statistics, however, has gradually brought our death-rate in the disease, especially in large cities, quite up to the standard in recent years. It seems not unlikely that many fatal cases of diabetes are still set down as nephritis or tuberculosis, these being the terminal stages of the affection. With regard to pernicious anemia, more and more cases are being discovered every year. So recently as last spring, Prof. Osler said that it was a surprise to him to find that even in good hands pernicious anemia was sometimes missed. Dr. Walsh spoke of Hunter's theory. In carious teeth a number of streptococci grew and were transferred thus to the stomach and the toxins manufactured during their growth were absorbed and proved actively hemolytic. He considered that especially streptococci were the offending agents in this microbic disturbance and suggested therefor as curative measures the most careful cleanliness of the mouth and of the gastro-intestinal tract.

Failure of Antistreptococcus Serum.—Dr. Walsh said that he had tried antistreptococcus serum very faithfully in one apparently favorable case but without success. The only result secured was a very

bothersome urticaria, which followed the injection of the serum on each occasion and for which nothing could be done. This patient had been improving when the serum was given, but the improvement did not continue and the dose was given but once a week. At the end of the sixth week she was in a very low condition and died a few weeks later. The most favorable medication in this case seemed to be the use of arsenic which on several occasions was followed by notable improvement, though it failed to be of any service at the end. There seems a general agreement now that carious teeth have nothing to do with the affection. Professor Osler announces that at Johns Hopkins the average cases of pernicious anemia have by no means unclean mouths and some of the cases have an even better condition of teeth than is normally found among hospital patients. Among the poorer classes of course the care of the mouth is by no means common, and in hospital practice it might be easy to assume that this neglect must be a common cause. It must not be forgotten, however, that pernicious anemia occurs quite often in private practice and in the better class of people who are of very cleanly habits.

Occupations in So-called Rheumatism.—Dr. James J. Walsh, of New York, said that vague pains, worse on rainy days, continued to be among the most frequent complaints treated in dispensary service and office practice. The old custom of attributing these pains to so-called muscular rheumatism, dependent upon an imaginary uric acid diathesis is gradually dying out. The number of remedies for uric acid diathesis is legion, but there is a growing suspicion that they are as little likely to do good to mankind as that other group of Scripture fame whose name was also legion. The question of the treatment of these vague pains must depend entirely upon their causation. As theory has failed in the explanation, it would seem advisable to go back to a careful examination of the patient. Dr. Walsh pointed out that many of the so-called rheumatic conditions are dependent upon various occupations and are really due to overuse of nerves when some toxic element is present in the circulation whether it be lead, alcohol, syphilis or some other foreign element.

Lead as a Factor.—In certain cases a low grade lead neuritis produces the tired feeling with discomfort on rainy days, which is sometimes mistaken for rheumatism. In one case seen, there was no other sign of lead poisoning, though the man was a painter, there was consequently considerable hesitation in attributing his condition to lead. During treatment, however, he fell and sprained his wrist and then a typical lead palsy with wrist-drop developed confirming the original diagnosis. That such things happen in diabetes neuritis is well known. It may be more or less latent for a good while, causing fatigue of muscle and vague discomfort, especially on rainy days, before the true cause and seat of the condition is discovered. Dr. Walsh pointed out that lumbago is quite frequently seen in tailors, especially those who sit in the old-fashioned position bent over their work. In them their lumbar nerves are used to maintain their position. People who lift heavy weights, especially the workers in iron foundries. bending their backs during their labor, are also prone to suffer from lumbago. Sciatica is usually more common among laborers who use their legs actively in their work. Shovelers, motormen, dentists and lathe workers are sufferers in this way. The mystery of why some people suffer and others do not still remains. It is evident, however, that some people are not built for occupations requiring the excessive use of certain groups of muscles, and if they continue to suffer from pain in them, the indication is for a change of occupation but not in the administration of the salicylates and other coal-tar products.

Rainy-Day Pains.—Whenever pains are worse on rainy days, this is at once thought to justify the diagnosis of rheumatism. It must not be forgotten, however, that affected teeth are also worse on rainy days and that a broken bone many years after union will still continue to be sensitive just before the beginning of a storm, while a dislocation usually continues to be a barometer for the rest of life. Even ordinarily healthy muscles are likely to suffer from fatigue and discomfort on much slighter provocation on rainy days. The fact of the matter is that a low barometric pressure invites blood to the surface and is sure to congest them with sluggish circulation and peripheral capillaries results. As a consequence sensitive nerves endings are pressed upon just at the time when lack of nutrition because of slow circulation makes them irritable.

Sedentary Occupations and Pains.—Painful conditions not infrequently develop in those who sit in bad positions. People who write much, not infrequently sit with one leg over the other in such a way as to cause the edge of the chair to press upon the sciatic nerve. In most people immediate discomfort is sufficient to cause any ulterior trouble. In some persons, however, there results a set of vague pains in the muscles of the leg and sometimes even in the knee.

Flatfoot and So-called Rheumatism.—Dr. Hughes, of Jamestown, N. Y., in discussing Dr. Walsh's paper, said that not a few cases of rheumatism in the feet were really flatfoot. In a certain number of cases, even where there was no giving way of the arch of the foot, the use of a support for the instep made persons much more comfortable than before. In general neurasthenia, there is often intense discomfort in the lower part of the back. In some patients this can be relieved by the use of a support for the shoulders. Dr. Hughes has seen sciatica develop as a result of awkward fatiguing positions assumed on the rifle range. These occur especially with positions on the face.

Alexander Operation.—Dr. James E. King, of Buffalo, N. Y., described a series of cases in which retroversion of the uterus was relieved by shortening of the round ligaments. The operation is available, however, not for such cases as develop pathological conditions, but as a mechanical means of holding the uterus in place. Where other pathological conditions exist besides the retroversions, the operation is likely to be a failure. Alexander's operation undoubtedly has a place, especially in young women, and as it is without danger, is almost sure to be retained in future gynecology. One unpleasant sequela of the operation is pain. This is usually unilateral and occurs most frequently on walking, though at times it is noticed even in a sitting position or as soon as the patient stands up. The cause of this seems to be some injury to the ilio-inguinal nerve, which runs close to the round ligament. The pain is most frequently seen in cases where suppuration has occurred, the nerve evidently becoming involved in the scar. Great care should be exercised not to wound this nerve, and as a rule there should be just as little manipulation of the tissues as possible. At times the operation seems to be a failure,

but this will usually be found to be due to the fact that the uterus sinks down too much, causing dragging pains. The use of a pessary, however, will usually relieve this condition. A certain number of Alexander's operations remain types of successful operation, but do not cure the patient. One unfortunate sequela is the occurrence of hernia. This is due to faultly technic in sewing up the canal or to suppuration. The canal should be sewed up just as in the operation for radical hernia. Suppuration of course must be avoided.

Passing of the Alexander's Operation.—Dr. H. O. Marcy, of Boston, said that when Alexander's operation was first introduced, he was an enthusiastic advocate of it. His success with hernia naturally made him take to it and he performed a number of the operations. Some had satisfactory and some had unsatisfactory results. In recent years he had ceased to do Alexander's operation and though it may be considered to have a place in gynecology, its usefulness is very limited and as now there is very little danger in opening the abdomen, which was one of the main reasons of the introduction of Alexander's operation in the pre-aseptic days, it now seems better to know just the condition that is present and causing the retroversion rather than attempt to correct it by an operation that so frequently failed.

Disadvantages of the Operation.—Dr. J. Hawley Burtenshaw, of New York, said that to one conversant with the anatomy of the female sexual organs, Alexander's operation ceased to have any definite purpose.

Function of the Round Ligament.—Dr. J. Riddle Goffe said that the round ligament has an important function. This is not to support the uterus, but to restore it to position when, after the emptying of a full bladder, there would be a tendency for the uterus to fall forward. It also keeps the fundus of the enlarged uterus against the abdominal wall and so avoids the discomfort that always ensues if intestines become inserted between the abdominal wall and the uterus. For retroversion of the uterus, shortening of the round ligaments will do very little. The first step if uterine retroversion is relaxation of the uterosacral ligaments. If this relaxation occurs, the uterosacral ligament must be shortened. This is not a difficult matter. They can be doubled upon each other and stitched together.

Iodine for Sepsis.—Dr. J. Hawley Burtenshaw reviewed the history of the use of iodine in the treatment of septic conditions. It was first used nearly twenty years ago by Alloway, who inserted suppositories containing from 10 to 20 grains of iodoform into the uterus in sepsis due to uterine conditions. The late Dr. Pryor put the use of iodoform in sepsis on a scientific basis and in 37 cases of puerperal sepsis had but four deaths. Of 27 cases treated without curettement by this method only one died. Of 10 cases that had been curetted before coming under Dr. Pryor's care, three died. Hence Dr. Burtenshaw has considered the advisability of introducing the introduction of iodoform into the abdominal cavity in septic conditions after operations. It had, however, proved very disappointing in practice. In Dr. Pryor's cases iodoform is absorbed so rapidly that he iodine reaction can be found in the urine in less than an hour. Dr. Burtenshaw was unable to demonstrate it either in the urine or feces and apparently it was not absorbed at all. Germs may grow on iodoform. This has sometimes been taken to mean that it is not a germicide. In the presence of animal secretions, however, iodine is set free and this proves eminently antiseptic. Dr. Burney Yeo, of London, has reported the absorption of iodoform through the skin. He uses it in the treatment of tuberculous peritonitis, employing equal parts of cod-liver oil and iodoform rubbed into the abdominal surface. He has reported a number of cures. Dr. Burtenshaw has found an extreme tolerance for iodoform on the part of septic cases. Sixty grains of iodoform may sometimes be used without the production of toxic symptoms.

The Presidential Address.—Dr. William Harvey Thornton, of Buffalo, then read the President's address, in which he insisted that the day of individual self-efficiency in medicine was past and the day of the Medical Society had come. As the result of association with members of the profession in medical societies, a marked change had taken place in recent years in the relations of physicians to one another. A sense of fraternal honor was making itself universally felt above any feeling of professional competition. Medical societies are useful not only by the information obtained by listening to papers, but by the stimulus of asociation for the physician's work and by the inspiration that is inevitably drawn from them. The members of a properly organized society are active and are continually giving off some of their energy to others, while the receptivity of members is also increased. Undoubtedly one of the most important things for professors of medical schools to insist upon with their students, is that they should join medical societies and take part with professional brethren in all movements for the benefit of the profession.

Medical Union in New York State.—Dr. Thornton said that undoubtedly the best interests for the medical profession in New York would be advanced by the union of the two at present existing organizations. Unfortunately it has been found that certain legal obstacles, which are for the present insurmountable, will prevent this union for a considerable period. In the mean time then, it behooves the members of this Association to work for the betterment of all association interests, so that when union does come, the way shall be paved for immediate prosecution of the best ends and purposes that will ameliorate professional conditions in New York. There is no reason in the world why union should not take place, and as the great body of the medical profession desires it, legal quibblers will not prevent it.

Antitoxin in Diphtheria.—Dr. Charles Gilmer Kerley, of New York, read a paper on how and when to use diphtheria antitoxin. It should be employed in large doses just as soon as the patient is found to have diphtheria. If the patient is seen on the third day of the disease, 3,000 units should be given regardless of the age of the patient. If after the third day, then 5,000 antitoxin units should be administered. This dose should be repeated in from eight to twelve hours if there has been no improvement. Improvement is considered to have taken place if there is a drop in the temperature and if there is a granular breaking down of the membrane. The dose must be repeated, however, every twelve hours, or with a little longer intervals if the symptoms do not improve. Dr. Kerley has used as high as 14,500 units and would use more if the symptoms did not abate. The doses depend not upon the age, but upon the amount of toxins present and upon the symptoms of the patient. In special forms of diphtheria as in laryngeal or nasal cases, large doses of at least 5,000 units should be employed from the

beginning and repeated every eight to twelve hours if necessary.

Intubation Cases.—Dr. Kerley considers that in intubation cases 5,000 units should be given at once and repeated in a few hours. After 10,000 units are given, the patient should still be watched carefully, and if necessary more antitoxin given. There is no doubt now that antitoxin is perfectly harmless. It has been given in so many cases as to remove all suspicion of danger. Dr. Kerley has given it himself in hundreds of injections for curative purposes and thousands for immunization and has never seen a local abscess. In a few cases he has given it where there was no diphtheria under the suspicion of the disease, but it has produced no bad effects. It does not produce nephritis. The dose of antitoxin should not be regulated by the age of the person, but by its condition when first seen. There should be no hesitancy in giving large doses.

Success of Antitoxin.—Dr. E. D. Ferguson, of Troy, N. Y., said that antitoxin for diphtheria is the only modern medical novelty that he accepted at once. Before its introduction, he had 75 intubation cases without a single recovery. If patients did not die from the diphtheria, they died from the subsequent bronchitis, which was undoubtedly related to the diphtheria. Immediately after he began to use antitoxin, he had five successive cases of laryngeal diphtheria in which intubation was necessary without a single death. Later experiences had all tended to confirm his first impressions, and he believed most firmly that diphtheria antitoxin was a valuable remedy.

(To be Continued.)

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirtieth Annual Meeting, held at Cincinnati, Ohio, October 11, 12 and 13, 1904.

(Continued from Page 810.)

PROCEEDINGS OF SURGICAL SECTION.

The Choice and Use of Medical Literature.—This was the subject of the President's Address, delivered by Dr. Hugh T. Patrick, of Chicago. He said the daily walk of doctors differed greatly. We had the family factotum, the conversational doctor, the lodge doctor, the church doctor, the society doctor, and the doctor deep in politics. They were good friends and good citizens, but really fine physicians (?). Not one of them. And not one of them knew or cared about good medical literature. The wise, skilful physician he would like to be, read a great deal. He selects his literature well and used it wisely. The selection of books was a task as delicate, a duty as significant as was the choice of drugs. Every book was a prescription for one's mental self. Progress meant expansion. No text-book doctor was an A No. 1 man. He must have the treatise, the system, the cyclopedia and the monograph. Of all books, the monograph was the best, and the worst. It must be properly selected and read with discrimination. In medicine there was no such thing as an authority. Every paragraph was to be adjudicated. Concerning medical journals, the speaker said: "Since to advise is more human than to confess, to find fault more spontaneous than to praise, to say don't easier than to say do, I venture first to advance a few of the don'ts in my mind. Don't admit to your presence a journal that is not perfectly straight and clean. Don't indulge in yellow journals, for such there are of deeper or fainter dye. Don't take a journal which is run as an advertising medium. Don't tolerate the journal that accepts abortive papers by underdone doctors. Don't waste time on journals abounding in short cuts. Don't pay much attention to columns of formulæ, notes on treatment, therapeutic hints, brief paragraphs on recent discoveries, and items on new drugs." In conclusion, four hints were given as to the manner of reading: (1) Systematically, to get up one subject well; to investigate it thoroughly in every way. Then take up another. (2) To read up fully on cases in hand. No case can be considered alone. It is always in relation to variant cases. (3) Reading to write, providing, of course, that the writer compels himself to produce really good material. Pursuance of these three plans produces a most desirable habit—the keeping of case records. This in turn stimulates reading, and enhances its value. Accurate comparison of experience ripens knowledge into wisdom. (4) To acquire the mental habit, or attitude, or aptitude of reading for reproduction. There is a vast difference between the acquisition of knowledge as a mere accomplishment, and as a means of action. It is well for us doctors to regard our store of knowledge not simply as an interesting museum of nature's wonders, marvelous to contemplate, but rather as an armamentarium, an orderly array of goodly weapons ready for instant use.

Surgical Tuberculosis in the Abdominal Cavity, with Especial Reference to Tuberculous Peritonitis.—This was the title of an Address on Surgery, delivered by Dr. William J. Mayo, of Rochester, Minn. In St. Mary's Hospital during the ten years from October 1, 1894, to October 1, 1904, 6,408 abdominal operations were performed; of these, 183, or a little less than 3 per cent. were for tuberculous lesions. Localized in intestine, 21 times; in appendix, 29; in Fallopian tube, 44; and tuberculous peritonitis, 89. Of the latter, not over fifty per cent. remained well, although 96 per cent were discharged improved or cured, giving a high percentage of relapses within two years. About four females were operated upon to one male. In seven relapsing cases in females, reinfection was found to arise frome tuberculosis of the mucous membrane of the tube. In all, 26 cases of tuberculous peritonitis in females were subjected to radical operation for the removal of tuberculosis of Fallopian tubes. In a few females an infecting focus was found in the appendix or cecum. In a minority the source could not be traced. In men a considerable number arose from tuberculous lesion of the appendix or cecum. Tuberculous peritonitis, like septic peritonitis, was due to a local focus. A considerable number of cases of tuberculous peritonitis were cured by nature. Simple laparotomy aided recovery by permitting of more thorough encapsulation of tuberculous products and by increasing the antituberculous serums in the abdominal cavity. Removal of the localized focus of infection in the tube, appendix, etc., would greatly increase the percentage of cures and prevent reinfections. If the local focus could be removed and was primary, a general cure might be expected. If secondary to a primary disease in the lung or other part of the body, ultimate recovery depended on curability of the chief lesion.

A Plea for Wider Knowledge Concerning Diseases Which Affect the Joints.—This was the title of the Address on Medicine, by Dr. C. Travis Drennan, of Hot Springs, Ark. The author urged the necessity of greater care in every instance in which a joint was

involved, no matter how insignificant such condition might appear. The usual case of acute articular rheumatism, gout and tuberculous disease could easily be recognized under ordinary conditions, but not so much could be said when one came to the early manifestations of arthritis deformans, so-called subacute articular rheumatism, and certain forms of gonorrheal arthritis. Under existing knowledge it was well-nigh impossible in certain cases to differentiate these diseases during their earlier manifestation. When the etiology of gout was written, in his opinion it would be shown to manifest itself primarily somewhere along the digestive tract. If we could get perfect digestion, we were in a position to get perfect assimilation, and with perfect assimilation, most assuredly we were in direct line to get perfect elimination. That there was a nervous element supervening in arthritis deformans, was a view concerning which he had a well-grounded belief.

Hospital Construction in American Cities and Towns.—Dr. A. J. Ochsner, of Chicago, in a paper with this title pointed out the fact that an enormous number of new hospitals had been established, and were still being established in every part of this country; that so far the new hospitals had almost all been built by architects who based their plans on the principles which govern hospital construction thirty years ago, at which time the theories of contagion and infection were wrong. Nothing was known about differences in purity of air at different levels. The elevator had not been perfected. It was not possible to make high buildings fireproof at a reasonable cost. These changes in our knowledge being of the greatest importance should change entirely the plans of hospital construction. The importance of proper location was discussed at length. The building should be so placed as to admit sunlight to all the rooms and wards. It should be accessible to the patients and their friends and to the medical staff. This could usually be accomplished without interfering with the other important conditions. The paper then gave a number of plans for hospitals intended for various purposes, the latter being those exhibited at the Louisiana Purchase Exposition by the author, associated with Mr. M. J. Sturn, architect. Stress was laid upon the fact that millions of dollars would be spent in the construction of hospitals in the immediate future, and that it was important that the subject be thoroughly studied in the meantime.

Radical Cure of Hernia.—Dr. Hal C. Wyman, of Detroit, Mich., read a paper on this subject. The problem of hernia had been so fully worked out in the inguinal and umbilical regions, that there was nothing to do now but to find the hernial opening, and stitch it up so that the bowel would stay where it belonged in the cavity of the abdomen. In any case of intestinal hernia it was a fair presumption that the intra-abdominal space was not large enough to contain the intestines, and the abdominal walls were insufficient to embrace the abdominal contents. It was reasonable, then, to assume that surgical intervention for the cure of intestinal hernia should include measures to reduce the volume of the abdominal contents, and to increase the size and strength of the abdominal walls. Masses of omentum and part of intestines must sometimes be removed to make room; and flaps must sometimes be dragged in to supplement the insufficiency of the muscles and fascias. Suturing must be complete, absolute, and without the tension that damaged and destroyed any of the tissues. Scrotal skin and fascia might be sutured into the large hernial openings with gratifying results by making an entirely new place for impingement of the intestines that would otherwise protrude. Many patients with inguinal hernia might be permitted to get up when they felt able, with great advantage in educating the abdominal muscles to perform their offices, so that hernias did not occur.

The Typical (Anatomical) Operation for the Radical Cure of Oblique Inguinal Hernia.—Dr. Alexander Hugh Ferguson, of Chicago, contributed a paper on this subject, which was accompanied by numerous and beautiful illustrations. Dr. Ferguson described his method of operating on these cases, a full description of which may be found in the current medical literature. So far as he could determine, approximately 2,200 cases had been operated on by his method, without the recurrence of hernia.

Dr. William J. Mayo, in the discussion said, that of 600 or more operations done in accordance with the Ferguson method, only three relapses had occurred, and he was uncertain as to whether these were really due to the Ferguson or Bassini operation.

Dr. H. O. Walker considered the Ferguson method rational, and the results good. He had operated by this method over a hundred times, and had had no recurrence of hernia. He spoke of two cases in which he did a perineal prostatectomy in addition to the operation for the radical cure of hernia at one sitting, with satisfactory results in both instances.

Dr. Emil Ries favored getting patients out of bed as early as possible after abdominal or hernial operations. He did not hesitate to let his patients get out of bed on the first or second day after operation, and had had no evil results therefrom. He had used the method of Kocher in a number of cases of inguinal hernia, the main point being inversion of the sac, and had had no recurrences following this method.

Dr. A. J. Ochsner said the Ferguson operation contained the successful elements of a herniotomy. The operation should be done without traumatizing the tissues severely. He emphasized the importance of not injuring these tissues by suturing too tightly.

Foreign Bodies in the Esophagus.—Dr. Carl E. Black, of Jacksonville, Ill., reported two obscure cases of foreign bodies in the esophagus in which a positive diagnosis was made by the use of the X-ray. He made extended remarks regarding the value of the X-ray in locating foreign bodies and assisting in their removal.

Spleenless Men; Report of Two Successful Cases of Splenectomy.—Dr. J. Henry Carstens, of Detroit, Mich., stated that splenectomy was indicated in selected cases of enlarged spleen, but not in all instances. The first patient had pain and distress for a year or two in the region of the spleen, with gradual enlargement. There was sudden rapid growth within three months, filling nearly the whole abdominal cavity. Emaciation was marked. Blood examination showed destruction and irregular shape of red blood corpuscles. A probable diagnosis of malignant growth was made. Operation disclosed it to be a sarcoma. Operation was followed by complete recovery, and to-day the blood is normal. In the second case, the onset was gradual, and there was an enlargement for six months. Splenic anemia was diagnosed. The leucocytes only numbered 1,200. There was extreme debility. Operation was performed, followed by complete recovery. The

blood was now normal, and patient had gained 96 pounds in weight since leaving the hospital fifteen months ago.

Operative Work in the Ureter Through the Author's Catheterizing and Operative Cystoscopes.—Dr. Bransford Lewis, of St. Louis, Mo., in a paper with this title, considered the subject in its three relations: As a practical and reliable procedure, as a diagnostic measure, and as a therapeutic measure. After alluding to his operative cystoscope, and the instrumental equipment connected with it—ureter forceps, scissors, dilators, irrigating attachments, etc., the author considerd diagnosis and therapy. The first patient, a male, in whom the diagnosis established was that of an inactive left kidney, while the right one was not only carrying on all the kidney functionation present, but contained numerous calculi of various sizes. Ureteral manipulations through the operative cystoscope removed a dozen or more small calculi, which he exhibited, but could not secure the escape of the largest, which was removed by lumbar incision. The patient recovered, notwithstanding the fact that the only kidney functionating was opened and cleaned out. The second case related was one in which small calculi had been removed by similar means in two sittings, a year apart, the stones being exhibited. The third case was one in which there had been severe and exhausting symptoms of ureter calculus, of sixteen years' duration. There were numerous consultations, and oft repeated attacks occasionally requiring the prolonged administration of chloroform. This patient was finally and definitely relieved, and had had no recurrence of the pain for nearly a year. A case of definite and severe stricture at the lower end of the ureter had been completely relieved by dilating methods, carried out through the operative cystoscope, in successive sittings, and without complaint on the part of the patient, who was a very nervous woman. Some of the difficulties and disappointments liable to be met with in this work were alluded to and suggestions given for avoiding the most important of them.

Perineal Prostatectomy.—Dr. Joseph Rilus Eastman, of Indianapolis, Ind., said that if all prostatectomies were made as soon as the symptoms of residual urine made its appearance, the mortality would be practically *nil*. As soon as practitioners and surgeons generally realized that prostatic hypertrophy was easily curable by early operation, prostatectomy would receive the recognition which it deserved. Too often the reason for the application of the Bottini method, perineal cauterization, or other palliative procedure was that a case had been permitted to drag along with the catheter until advanced age, general sclerosis or kidney complications forbidding prostatectomy. The conservative operation of Hugh Young should be one of choice, if applicable. It consisted, as was now generally known, in making a sagittal incision closely parallel to the median raphé, through each lateral lobe, and shelling out one lateral lobe at a time, preserving the median bridge containing the ducts. After the removal of the lateral lobes, the third lobe was depressed into a lateral defect and likewise shelled out. After enucleation, Young united the separated margins of the levator ani to the end, that the gauze packing might not press upon the rectum and favor fistula formation. Clinically, the perineal operation had been proven to be the safest. In a large majority of cases prostatectomy might be completed through a perineal incision. If, however, the perineum having been opened, it was discovered that the perineal distance was so great or the median intravesical growth so large as to make the suprapubic operation necessary, such a suprapubic opening might, except in exceptional cases, be made at the same sitting. The perineal was the least bloody route, since it admitted of a complete exposure of the prostate, thereby making it easier to shell out the prostate in the essential line of cleavage. After perineal prostatectomy, the bladder *bas fond* was provided with low, level drainage instead of the up-hill or siphon drainage of the suprapubic operation. It would certainly be conceded that the danger of wounding the ejaculatory duct in any conservative operation would be lessened if the perineal operation be chosen.

Pathological Changes Resulting from Prostatic Enlargement.—Dr. Charles E. Barnett, of Fort Wayne, Ind., said there was still plenty of room in the field of research for the etiological factors in prostatic enlargement. Perverted orchidism and inflammation seemed to be the most logical causes. The former produced hyperplasia on account of a lack of orchoprostatic equilibrium. Inflammation started true adenomyoma, either or both, by stimulating the embryological matrix, on account of the infected acini, and there was a pathological evolution tumor metamorphosis from a fibro-myo-adenoma to an adeno-myo-fibroma. The pelvic fascia was responsible for all future pathology after enlargement began, on account of its ability to accommodate itself to the displacements that occurred. Anatomical study of this fascia was especially hard for the student, on account of the multiplication of synonyms found in text-books. The distorted neck of the bladder started pathology which, in its progression, finally reached the kidneys, and if it was not stopped by operative procedure upon the prostate, it would destroy them. The cases reported exemplified the vast amount of destruction done the whole genito-urinary tract from the prostatic urethra backward, and showed the fallacy of operating on patients at that stage of pathology. A plea was made for the general practitioner to discover prostatic cases early, so that the surgeon could operate on them without danger.

Dr. G. Frank Lydston, in the discussion, thought the profesion at large had accepted perineal prostatectomy as the operation of election, although there were certain cases that should not be dealt with by this route. It was the most direct route, where it was practicable to adopt it. In many instances it was imperative to treat patients palliatively until one was positive that the tumor was not only increasing in size, but was causing urinary obstruction. He pointed out the dangerous phases of prostatectomy. When the operation was done in a careful manner there was no injury to the ejaculatory ducts. There were numerous cases where sexual function had not been impaired.

Dr. F. F. Lawrence said that if surgeons could convince the general profession that hypertrophy of the prostate was a surgical disease, the mortality now attending prostatectomy would immediately decrease as it had done from operations on cases of appendicitis, ovariotomy, and other surgical affections.

Dr. H. O. Walker had operated by the suprapubic route over twenty times, and had lost one patient. At the same time, he preferred, wherever practicable, to do perineal prostatectomy. He removed a prostate suprapubically that weighed seven and a half ounces.

Plastic Surgery of the Urethra.—Dr. G. Frank Lydston, of Chicago, read an interesting and valuable paper on this subject, in which he described the methods he had found most satisfactory in his own cases.

Therapeutic Value of Radium.—Dr. Myron Metzenbaum, Cleveland, Ohio, narrated his personal observations in the clinical uses of radium. He discussed the physiological action of radium of low activities contained in hermetically sealed tubes when placed on ulcerated areas and on the unbroken skin for thirty-five minutes; also the pathological condition resulting from placing radium of high activity contained in hermetically sealed tubes on the unbroken skin for long periods of time. The therapeutic results obtained by using tubes of radium of low activity and coarse were as good in the treatment of lupus, rodent ulcer and small epithelioma as those from the use of radium of high activity and great expense. The author reported and showed photographs of three cases of lupus, and one each of rodent ulcer and epithelioma that had apparently healed by the aid of radium rays. Photographs made by the X-ray and by radium were exhibited, showing that the latter had comparatively little value in the skiagraphy of bone as compared with the X-ray. He pointed out the results obtained by suspending hermetically sealed tubes in various solutions, showing that the same had not been rendered radioactive, and therefore that hey had no special therapeutic value.

Two Cases of Pancreatic Cyst.—Dr. Van Buren Knott, of Sioux City, Iowa, pointed out the physical signs of these cysts and the difficulties which sometimes attended their diagnosis. He showed how the surgeon might be misled by the symptoms. He discussed the method of treatment, made a comparison between incision and drainage and excision, and reported two cases which presented widely different symptoms, physical signs, and morbid influence, treated by different methods. Comparison of these two cases of cysts of the pancreas had been extremely interesting to him, and revealed many striking differences. The more important of these he briefly mentioned as (1) the difference in location and anatomical relations of the tumor. (2) Neither cyst occupied the usual position for such tumors, *i.e.*, somewhat to the left of the median line. (3) Neither was a so-called false cyst of the pancreas, which had a localized collection of fluid in the lesser peritoneal cavity, but each involved the tisues of the pancreas alone. (4) The appearance in the first case of symptoms of disturbed function long before evidence of cyst formation could be detected, while such symptoms remained entirely absent in the second case, even after the tumor had attained great size. (5) The even spherical form of the pancreatic distention in one case, and the peculiar sausage-like tumor in the other, gradually expanding into a spherical termination. (6) The fact that the patient who had much the less complete operation, *i.e.*, incision and drainage, had a much smoother and more rapid recovery than the one in whom the tumor had been almost completely removed. (7) The involvement of the stomach in the first case renderd possible the wounding of its walls during the puncture of the cyst, as the true nature of the stretched, flattened and congested viscus was recognized with some difficulty. In the second case no such accident was possible. (8) The accumulation in the walls of the first cyst of a peculiar sticky, grayish, ash-like deposit, while the lining membrane of the second tumor was clean and smooth. (9) In neither case was the sallow dry skin, said to be characteristic of cysts of the pancreas, present.

Tenotomy of the Tendo-Achilles in Partial Amputations of the Foot; also in Oblique, Compound and Comminuted Fractures of the Tibia and Fibula.—Dr. J. P. Webster, Chicago, read a paper on this subject in which he drew the following conclusions: (1) It is a well-established clinical fact that after tenotomy of the tendo-Achilles (when the foot is kept at rest) the process of repair takes place and satisfactory functional use of the foot is the result. (2) It is much easier to maintain the foot in the exaggerated flexed position after the tenotomy of the tendo-Achilles than with any form of splint, anterior or posterior, metallic or plaster. (3) There is much less pain, as the foot and ankle joints are placed at absolute rest. (4) When the patient commences to walk, none of the resistance of the contracted heel cord is present, so that there is but a slight limp. (5) In oblique and comminuted fractures of the fibia there is much less danger of overriding of the fragments of bone, after a tenotomy. This greatly simplifies the care of the leg and helps to prevent deformity.

(To be Continued.)

BOOK REVIEW.

A SHORT TREATISE ON ANTITYPHOID INOCULATION. By A. E. WRIGHT, M.D., Late Professor of Pathology, Army Medical School, Nutley; Pathologist to St. Mary's Hospital, Paddington, St. Archibald Constable & Co., Ld., Westminster.

THIS book consists of a series of papers, with amplifications, already published in *The Practitioner*. It represents an endeavor to forgive a "brief exposition of the scientific principles involved in antityphoid inoculation, and a summary of the practical results already achieved. Being the work of a scientist thouroughly imbued with the principles of the new German school of Ehrlich and his followers, and at the same time, conversant with the practical side of the problem, it is a timely and welcome contribution. Both of these aspects of the question, the theoretical and the practical are presented in an interesting and scholarly manner. The book is based on work in connection with antityphoid inoculation in the British Army, which included, in addition to laborious experimentation, the inoculation of 4,000 soldiers all over India, and the supply of some 40,000 doses of antityphoid vaccine during the South African war.

BOOKS RECEIVED.

ANNUAL REPORT OF THE DEPARTMENT OF HEALTH OF THE CITY OF NEW YORK. 1902. Illustrated.

CLINICAL URINOLOGY. By Dr. Alfred C. Croftan. 8vo, 298 pages. Illustrated. Wm. Wood & Co., New York.

PROGRESSIVE MEDICINE. Volume III. 1904. 8vo, 284 pages. Illustrated. Lea Brothers & Company, Philadelphia and New York.

DISEASES OF THE STOMACH AND INTESTINES. By Dr. Boardman Reed. 8vo, 1021 pages. Illustrated. E. B. Treat & Co., New York.

TEXT-BOOK OF HUMAN PHYSIOLOGY. By Dr. Albert P. Brubaker. 8vo, 699 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia.

SIMON'S PHYSIOLOGICAL CHEMISTRY. By Dr. Chas. E. Simon. Second Edition. 8vo, 500 pages. Lea Brothers & Company, Philadelphia and New York.